A scenic parkway for the park

Report of the Doyle Drive Task Force
to the San Francisco Board of Supervisors

February 2, 1999

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Doyle Drive Task Force of the San Francisco Board of Supervisors

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Table of Contents

Letter of Transmission

Honorable Members of the Board of Supervisors:

The Doyle Drive Task Force was created to respond to the reality that the present roadway is seismically unsafe.

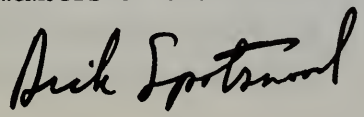
Our report contains a stunning recommendation. The designs by Michael Painter, as they have evolved throughout this process, combine brilliant landscape planning and environmental awareness of the highest order, with a roadway that will be much safer for the motorist and which responds to many needs of the Marina District and the Presidio.

The Task Force inquired into all aspects of Doyle Drive. Discussions over the exact configuration of the roadway were important, but remained only one aspect of this report. To solely focus on this issue would be a serious error. The Task Force has expressed preferences, but it also acknowledges that detailed traffic studies will be needed.

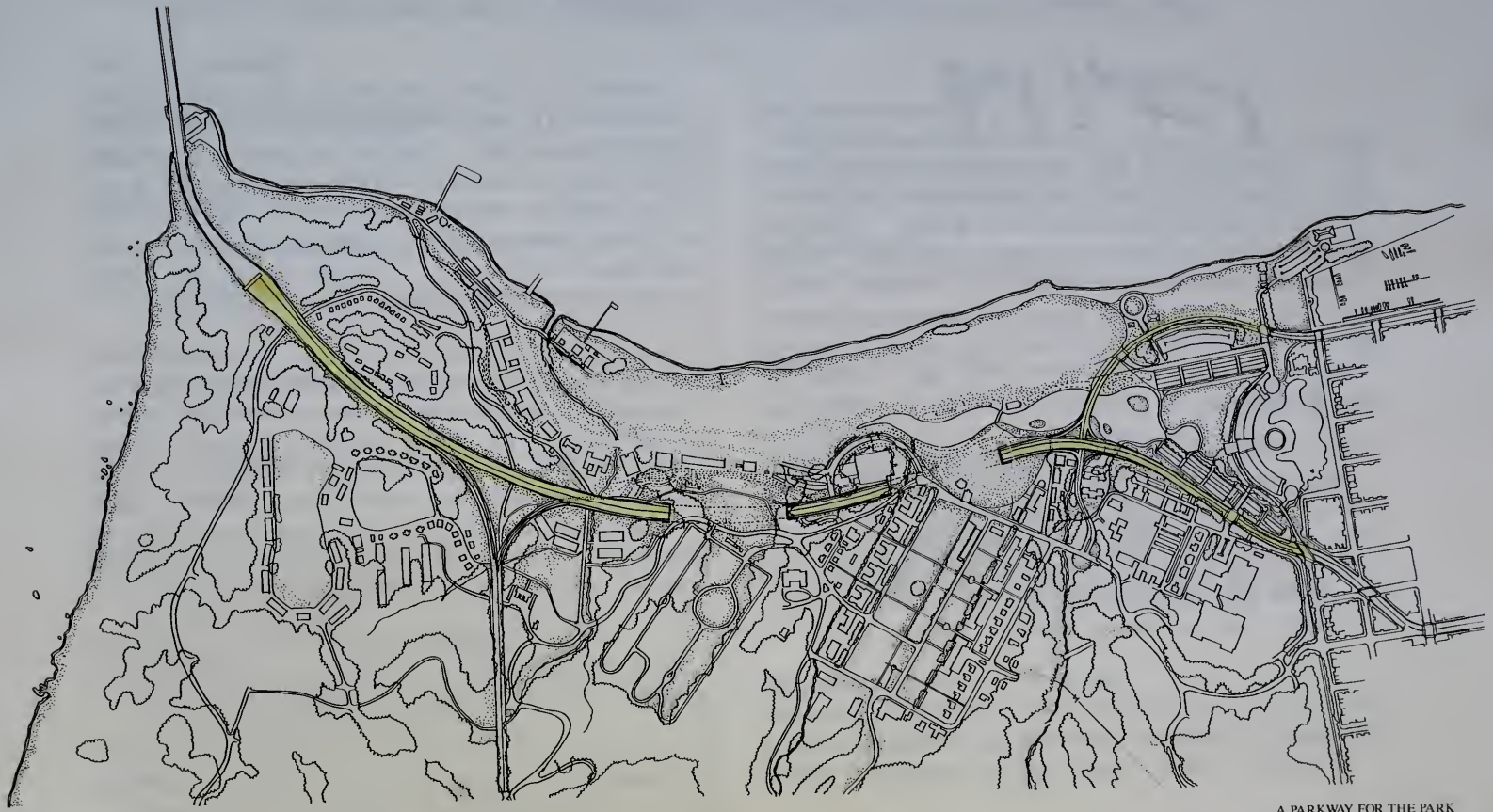
This is a large Task Force, representing many different views. No one person or group achieved all of their goals, but in such a process, unanimity on every issue was neither obtainable nor desirable if a strong statement were to be made.

The report offers a vision of a safer roadway and a better environment in which the roadway must exist. Traffic is one of the major constraints on the quality of life in San Francisco and the North Bay counties. This report is highly sensitive to the impact of traffic on the nearby neighborhoods.

What we have presented is a Parkway for the Park. It will be a fitting complement to the Golden Gate Bridge, the Presidio, the Marina District and San Francisco. The Task Force submits this report for your acceptance, and asks that you adopt its recommendations. Thank you for permitting us to serve San Francisco and its neighboring communities as members of the Task Force.



Dick Spotswood, Chair



Michael Painter's conceptual plan.

On the cover: New view from Gorgas Ave.

Figure 1

A scenic parkway for the park

For thirty years, decision makers confronting the dilemma of Doyle Drive have chosen, in the end, to do nothing. Now, Caltrans says that Doyle Drive is nearing the end of its useful life and must be replaced. The do nothing option is being foreclosed.

The Doyle Drive Task Force regards this as an excellent opportunity to design a new, safer and more attractive Doyle Drive. The new Doyle Drive can correct the failings of the existing one: a less than safe, unattractive, noisy, view blocking, obtrusive barrier which divides the Presidio.

Underlying our recommendations is a vision of Doyle Drive as a scenic parkway for the Presidio national park. We envision a safe road, designed to standards which maintain fundamental safety improvements; a sensible road, which provides efficient and pleasant movement of vehicles along it and easy movement of pedestrians across it; and a beautiful road, landscaped, quiet and compatible with the character of its surroundings.

Existing

Doyle Drive squeezes through a narrow space between the Palace of Fine Arts and the historic Gorgas Ave. warehouses. The roadway and surrounding walls block views and access.

Proposed

By moving the existing roadway to Gorgas Ave., a green open space would once again unite the Palace of Fine Arts and the Presidio. The Palace lagoon could also be reconnected to a restored Crissy Field wetlands.

Improved views

Figure 2

Figure 3

Findings

The dilemma of Doyle Drive

Any rebuild of Doyle Drive has twin goals: to increase safety and to minimize the impacts of the highway and its traffic. The dilemma is that many of the effects of these goals create conflicts.

The existing road has six lanes. During rush hours, plastic pylons are used to reverse the direction of traffic flow of one of the center lanes. Thus, four lanes can carry traffic in the rush direction. For Doyle Drive as a whole, six lanes can do the work of eight. Since 1968, this method has provided four eastbound lanes in morning rush hours. (For the past 18 months traffic has moved smoothly using only three westbound lanes during the evening rush). However, the cost of this efficiency is safety: there can be no fixed median barrier to prevent head-on collisions.

The road can be made safe by designing it as a freeway. However, safety also has its cost. Standard design would double the width of the existing structure, carving a wide scar through the visual heart of the new Presidio national park. One side effect would be to increase the overall traffic capacity of the roadway, thus violating the longstanding San Francisco Master Plan policy against such increases. These increases would most heavily affect the Marina and Richmond districts, whose city streets connecting to Doyle Drive already at peak times are at capacity.

Caltrans' offer

Since 1975, Caltrans has proposed to rebuild Doyle Drive as, in effect, an eight-lane road—six lanes with a contiguous auxiliary lane on either side for local or merging traffic. In 1985, the Supervisors asked for recommendations for an alternative which would "reduce fatalities...without encouraging an increase in the number of vehicles using Doyle Drive on an average daily basis." Responding in 1988, Caltrans offered to remove the two auxiliary lanes from its design, but only if it also closed the connecting ramps at Route 1 which allow traffic to flow between the Marina and Richmond districts. The National Park Service estimates this would divert 18,000 vehicles a day to local Presidio roads and city streets.

A strategy for consensus

Given the 30 years of trench warfare over Doyle Drive, it was obvious that if the Task Force was to offer meaningful recommendations to the Supervisors, we had to reach consensus on the big, contentious issues: safety, traffic capacity, impacts on the Richmond and Marina districts, impacts on the national park, and a fair distribution of Doyle Drive's impacts and benefits.

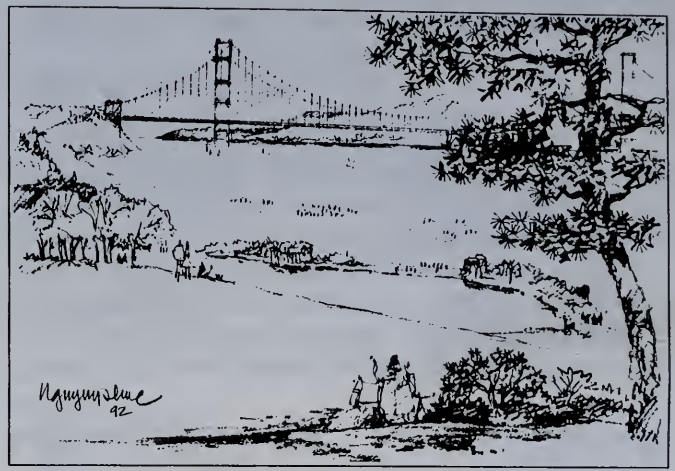
Getting the best design

The Task Force chose to recommend a set of policy guide-

Existing

Supported on piers, with its roadway at the level of the Main Post parade ground, Doyle Drive has, for over 50 years, divided the Presidio's central areas from Crissy Field with a noisy, view-blocking barrier.

Figure 4



Proposed

Michael Painter's plan lowers Doyle Drive to the level of Crissy Field. In two critical locations, a new structure would form a tunnel over the roadway. The exterior of the tunnel would be landscaped, allowing people to walk over the hidden road from the Main Post to Crissy Field.

Figure 5

Improved access

lines that should result in a safe highway design that is sensitive to its surroundings. By their nature, such guidelines are somewhat abstract. So we applied the guidelines to the many conceptual designs proposed by Caltrans, the National Park Service, landscape architect Michael Painter and civil engineer Stanley Reinfeld, and reached consensus on a preferred concept. Our intent was to give the Supervisors a picture of how we think the new Doyle Drive should look and feel. In the end, we endorsed the Michael Painter concept. It is more than a design—Mr. Painter also proposed the vision we adopted of Doyle Drive as a scenic parkway.

Balancing conflicting interests

The Task Force's recommendations don't give every interest group everything it wanted. But every interest gets something very important. The City gets no increase in traffic capacity. Caltrans and drivers on Doyle Drive get a much safer road. The Richmond and Marina districts maintain the existing balance of traffic flows. Residents of Richardson Ave. get traffic slowed down and moved away from their houses. Residents of Marina Blvd. (and, by extension, Bay St.) get their traffic slowed down, and a ramp configuration which discourages traffic increases and maintains their street's residential and recreational character. Residents of the Marina district get to present other ways to reduce the impacts of existing traffic. The national park gets powerful support for a beautiful parkway design and improved access.

Key Task Force Recommendations

Traffic issues

- Provide three traffic lanes in each direction. The Task Force prefers that there not be a continuous auxiliary lane between Route 1 and the proposed Presidio interchange;
- Widen traffic lanes, add shoulders and a fixed median barrier;
- Design shoulders to preclude their use as additional traffic lanes;
- Engineer entrance and exit ramps for safer merging movements;
- Design Doyle Drive for a posted 45 mph speed limit;
- Engineer connecting ramps for speeds compatible with the parkway's posted speed limit;
- Engineer the roadway to accommodate existing traffic volumes;
- Locate and design entrance and exit ramps to minimize neighborhood impacts;
- Provide an interchange so that Doyle Drive traffic can enter the Presidio directly, instead of travelling through surrounding neighborhoods.

Existing

The heavy concrete piers of the high viaduct loom over historic buildings. The viaduct's external and internal reinforcing steel is rusting, and its concrete is fracturing. After 56 years, it is due for replacement.

Figure 6

Proposed

This is the view from a scenic overlook for walkers and bicyclists proposed as part of a new high viaduct. The design of the new structure would not be cumbersome and visually heavy as is the existing one.

Figure 7

Improved safety and amenities

Design issues

- Support the Michael Painter design concept of a scenic parkway;
- Design the eastern ends of Doyle Drive with the character of the city streets;
- Realign the Richardson Ave. ramps to Gorgas Ave., to restore open space near the Palace of Fine Arts, and to move the roadway away from nearby private residences;
- Realign the Marina Blvd. ramps to protect the recreational and residential character of the street.
- Use tunnels to reduce traffic noise, restore parkland, and reconnect the Main Post and Crissy Field;
- Provide pedestrian overlooks with spectacular vistas near or on the high viaduct.

Complete recommendations are on pages 50-58.

Next Steps

Caltrans' position is that the Supervisors must choose between its two proposals: eight lanes, or six lanes with no intracity connections to Route 1. As part of its comprehensive proposals, the Task Force recommends six lanes with the intracity connections. It puts the burden on Caltrans to demonstrate through actual field tests that any additional lanes are required to avoid unacceptable levels of traffic congestion.

No time for delay

Once the Board does so, Caltrans will prepare a Project Study Report, the first step in getting a project funded. The reports typically take at least six months to complete, and only then can Caltrans request funding. This creates great time pressure. The deadline for projects to be included in the 1994 State Transportation Improvement Program and federal Transportation Improvement Program is July 1, 1993. If this deadline is missed, it will be two years before the next opportunity to fund Doyle Drive's reconstruction, and by then federal funds already may be committed to other projects. If so, Doyle Drive would not be completed until well after the turn of the century.

Should the Supervisors not select one of its proposals, Caltrans says it will either not fund the project, or will move to build the six-lane project without intracity connections. There appears to be an open legal question whether the Supervisors have veto over the six-lane design, since its additional shoulders would widen the roadway.

Furthermore, any reconstruction will require Caltrans to get a new easement from the Presidio's new manager, the National Park Service which, like the City and Caltrans, has major policy issues at stake.

The Supervisors should know that the Michael Painter design is independent of the number of lanes on Doyle Drive.

Acknowledgements

The Doyle Drive Task Force thanks the following individuals and organizations for their assistance in making this report possible:

The Golden Gate Bridge, Highway and Transportation District, for its generous provision of meeting space and office support, and to Bob David for drawing the traffic volume diagrams.

Michael Painter, landscape architect, for his comprehensive vision of Doyle Drive, the Presidio and the Golden Gate; for his willingness to adapt his ideas to frequently changing needs and demands; and for the thousands of hours of time he has volunteered to making his city more beautiful.

Stanley Reinfeld, civil engineer, for extending a job-for-hire into an act of civic spiritedness by volunteering his design concepts for Doyle Drive.

Ron Somers, for volunteering to act as secretary to a task force without staff.

Merle J. Johnson, for representing fairly and patiently the positions of Caltrans.

Dean Macris, consultant to the National Park Service, for the many times when we were stuck on an issue and he offered the solution we could agree upon.

Residents of San Francisco who, as citizens, benefited the democratic process by taking time and effort to attend and testify at Task Force meetings, or to submit written comments.

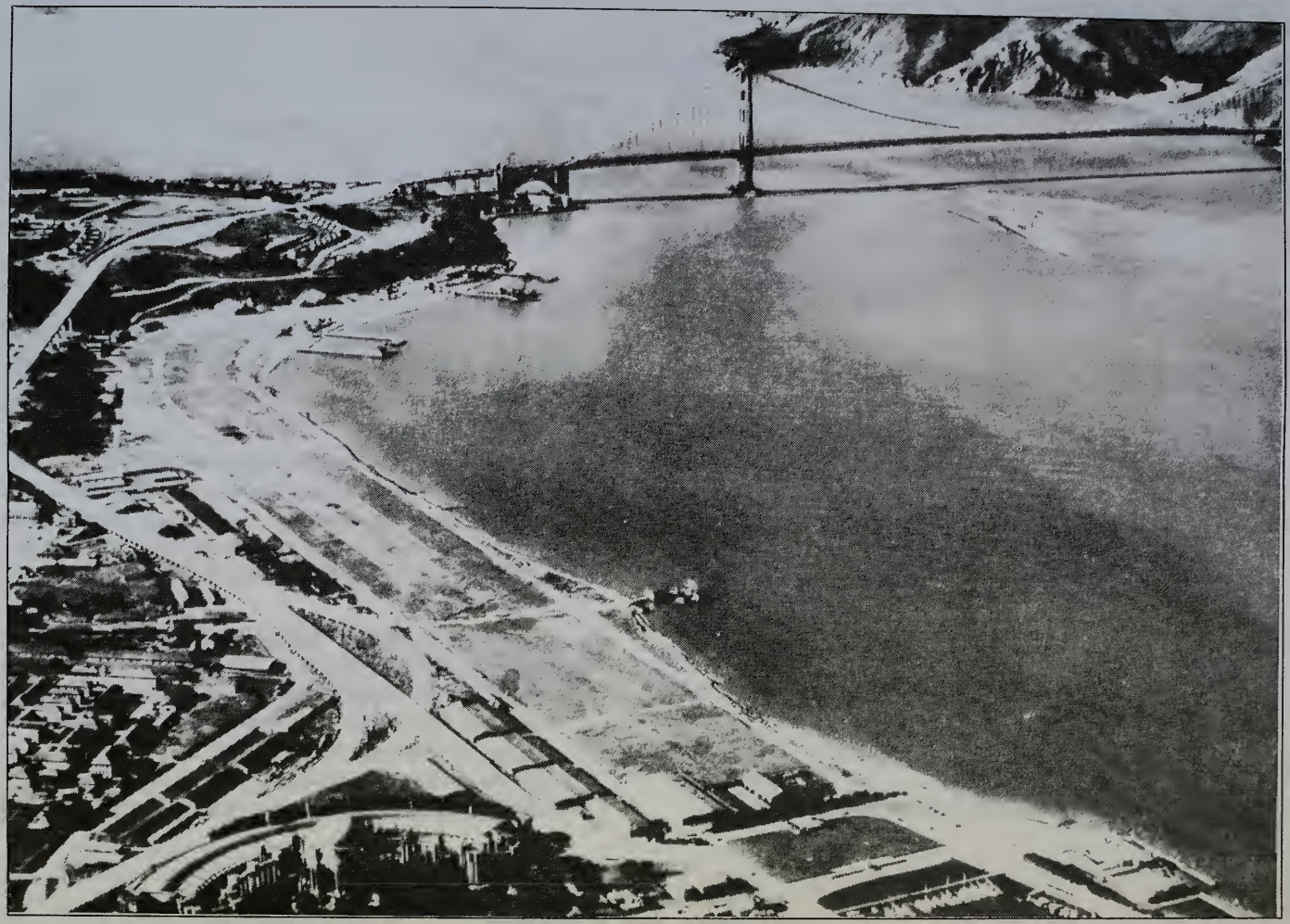
Edited by Michael Alexander.

Scope of work

The San Francisco Board of Supervisors created the Doyle Drive Task Force by Resolution No. 900-91, approved by the Mayor on October 18, 1991, as amended. The 18- member Task Force was charged to investigate conditions on Doyle Drive and to evaluate alternative realignments. It was directed to present to the Board of Supervisors a report containing:

- information on Doyle Drive's current traffic conditions;
- an analysis of the projected short and long-term changes in conditions;
- recommendations to improve the safety of the roadway.

In addition, the report is to analyze realignment proposals for Doyle Drive, including the Michael Painter proposal, and their effect on access, visual quality, views and the Presidio as a national park.



Doyle Drive and the Golden Gate Bridge in 1936.

Figure 8

The History of Doyle Drive

Doyle Drive was constructed in 1936 by the Golden Gate Bridge District as the southern approach to the Golden Gate bridge. It was designed and built to operate with three 10-foot lanes in each direction separated by a painted double stripe. In September 1945, Doyle Drive became a state highway, and the California Division of Highways assumed responsibility for maintenance of the section from near the bridge toll plaza to the Marina Blvd. and Richardson Ave. exits.

In 1955, aware of increasing accidents and congestion, the Bridge District requested the state to widen and reconstruct Doyle Drive. San Francisco agreed, recognizing that the changes would be entirely on Army property.

In 1962, the Bridge District asked the state specifically for an eight-lane divided roadway to become part of Interstate 480, the proposed Golden Gate Freeway connecting the bridge and the northern San Francisco waterfront to the Embarcadero Freeway. Not liking the effects of the freeways built in the 1950's, the public revolted against building new ones. Doyle Drive succumbed to the larger fight, as San Francisco objected to the proposed routing.

In 1968, plastic pylons began being used to reverse the direction of the center lane during the morning and evening commutes. This allowed four lanes to operate in the peak direction with two lanes operating in the reverse direction.

On July 11, 1970, a car traveling more than 100 miles per hour on Doyle Drive crossed into opposing traffic, hitting another car head-on. Ten people were killed. After investigating, the National Transportation Safety Board recommended: "...expedite the completion of contract plans to improve the southern approach to the Golden Gate Bridge to bring it up to freeway design standards..., including 12 foot lanes, a permanent median barrier (or divided roadway), and acceleration-deceleration lanes at interchanges."

A month later, the Bridge District, with the City's support, appealed to the State Highway Commission to improve Doyle Drive. The Commission approved the preparation of plans so that the project would be ready for early construction if funding became available. In February 1973, a Draft Environmental Impact Statement was completed for the reconstruction of Doyle Drive as an eight-lane highway with a fixed median barrier.

However, an aroused public objected to the proposal's increased traffic capacity. At the City's request, the follow-

History Page 15

ing year the state legislature passed the Marks Bill, S.B. 147, which prohibits Caltrans from widening Doyle Drive to more than six lanes without the specific approval of the San Francisco Board of Supervisors.

During 1974 and 1975, Caltrans and City staff developed new proposals which included varying lane configurations and ramp metering. After reviewing them, the San Francisco Citizens' Advisory Panel to the Golden Gate Corridor Study recommended the following measures:

- reconstruct Doyle Drive as a 66 foot wide, six-lane roadway with a center concrete barrier;
- request the Golden Gate Bridge District to reduce the incoming lanes on the Bridge from four to three lanes in the peak direction;
- close the Route 1 entrance to Doyle Drive during morning commute hours until the Bridge District implemented the lane reduction;
- provide more mass transit.

On May 15, 1975, the Supervisors' Streets and Transportation Committee recommended interim actions for Doyle Drive, including:

- providing a movable median barrier;
- requesting the Bridge District to reduce the southbound lanes on the bridge to not more than three at any time;
- keeping the Route 1 ramps open.

Four days later, the full Board of Supervisors adopted the resolution as recommended. The Bridge District supported the Board's interim proposal. However, the Marin Transit District and the Marin County Council of Mayors and Councilmembers opposed the resolution. The Metropolitan Transportation Commission also opposed the interim plan and refused to approve funding for the proposal because it conflicted with MTC's Regional Transportation Plan and because MTC was awaiting the analysis and recommendations of its Golden Gate Corridor Study.

In a July 26, 1976, letter to the Bridge District, Marin County and San Francisco, Caltrans expressed concern for improving safety on Doyle Drive and noted that the mass transit alternative of adding ferry service had been delayed.

On November 4, 1985, the Board of Supervisors requested that Caltrans submit "its recommendations for altering Doyle Drive in a manner best suited to reduce fatalities on Doyle Drive without encouraging an increase in the number of vehicles using Doyle Drive on an average daily basis."

On May 23, 1988, Caltrans responded with two proposals:

- a standard eight-lane roadway with a fixed median barrier or,
- a standard six-lane roadway with fixed median barrier requiring the closure of the Route 1 connections to Doyle Drive which allow travel between the Marina and Richmond districts.

On November 14, 1991, Caltrans reiterated its two alternatives for Doyle Drive and requested some official assurance that one of the two concepts was satisfactory to the Board of Supervisors. In response, the Board created the present Doyle Drive Task Force.

Doyle Drive from Crissy Field, with Presidio Main Post atop the bluff.

Figure 9

The character of Doyle Drive and its surroundings

The setting

From the toll plaza of the Golden Gate Bridge to the ramps ending at Marina Blvd. an Richardson Ave., Doyle Drive lies entirely within the Presidio. The old Army post is now being transformed into a national park, a unit of the Golden Gate National Recreation Area.

Doyle Drive's setting is the southern headlands of the Golden Gate, and part of the northern bay front of San Francisco. The tree-lined highway generally lies near the bluffs at the back of Crissy Field, which was created in 1915 by filling a mile-long curve of marsh and lagoons. The bluffs are typically 40 to 50 feet high. Atop them are some of the Presidio's important destinations: serene Fort Scott, the national cemetery and the Main Post. Near Crissy Field's western end, a small valley breaks the bluff line, opening to the bay. At the eastern end the bluffs flatten, revealing the Letterman medical complex. Farther east is the great dome of Maybeck's Palace of Fine Arts. The Golden Gate Promenade, a recreation trail heavily used by walkers, joggers, bicyclists and scenery seekers, runs the length of the bay front, from the Marina Green to Fort Point, past clusters of fishermen and boardsailors. When seen from the bridge, the Presidio forest forms a green backdrop to the shore, with the City's hills and towers beyond.

The whole forms a stunning composition with the bay, Alcatraz, Angel Island and the Marin headlands. This dramatic natural entrance to one of the world's great cities is one of the most recognized sites on earth.

For the Army, the waterfront also has been the Presidio's back door industrial area, sprinkled with maintenance shops and motor pools. While the plan for the national park is not yet complete, comments from the National Park Service and the public show a consistent desire to make the waterfront the Bay Area's front door. A sculpted promenade walk; restoration of the historic lagoons, sand dunes and native plants; and improved views are all likely to be significant changes to the new Presidio.

Doyle Drive

For 1.5 miles, Doyle Drive travels the length of this bay front setting. From the toll plaza, it sweeps along the top of the tree-lined bluff, descending at a moderate grade. It crosses the small valley on a high viaduct of red-painted steel girders, where ramps connect with Route 1/Park Presidio Blvd. to the south. Descending to the western edge of the Main Post, Doyle Drive becomes a lower viaduct on concrete piers, then runs flat near the top of the

bluff edge, about 45 feet above Crissy Field. East of the Main Post, three lanes and the majority of traffic swing south to Richardson Ave. The main structure continues east to become the Marina Blvd. ramp. see map etc. tk

Doyle Drive is not an attractive structure. The roadway tucks near the bluff edge in an awkward fashion, with two curves connecting three straightaways in a broken-backed arc. The grade of the road changes several times. The high viaduct looms heavily over historic buildings. The long low viaduct, set on closely spaced concrete piers, is a noisy, visual intrusion on the Main Post and cemetery. The elevated structure blocks important views of the bay and the Palace of Fine Arts and, typically, the area beneath the low viaduct has the character of an industrial wasteland. Worst of all, it is a gloomy physical barrier dividing Crissy Field from the Main Post, Fort Scott and the Presidio's upland activities.

As old Doyle Drive nears the end of its useful life, the opportunity is to design a safe road more in keeping with the new use of its setting: a national park and a grand entrance to a great city.

The approach roads

Richardson Ave. and Lombard St. Since 1910, Lombard St. has been designated a U.S. Route, now U.S. 101; Richardson Ave. was designated after its construction in the 1930s. From the west, ramps from Doyle Drive swing southeast and join to become Richardson Ave. As it leaves the Presidio and comes to grade, the road is flanked with historic industrial warehouses and recreation buildings on the west, and a fine row of Monterey cypresses and Maybeck's Palace of Fine Arts on the east. At this narrow neck, there is room for only five 9.5 foot wide lanes, three eastbound and two westbound, with a painted center divider but no shoulders.

Just beyond, the roadway enters a three block residential section. Here, it widens to six lanes with a center divider and two parking lanes. Only 17 residential buildings front on or abut Richardson Ave. The road itself changes from an expressway ramp to a city arterial with signalized intersections.

At the intersection with Lombard St. are two service stations and a motel. East from there, Lombard St. is a busy commercial arterial lined by motels, restaurants and residences, with six lanes, two parking lanes and a center divider all the way to Van Ness Ave. During rush hours, left turns are prohibited on Lombard St., and signals are timed to maximize the commute traffic flow.

Marina Blvd. From the west, Doyle Drive descends to become Marina Blvd. This is a complicated intersection, with spur roads to the Palace of Fine Arts, the St. Francis Yacht Club, and the Presidio. Marina Blvd. continues east as a broad, four-lane esplanade. The south side has a parking lane and is lined with large single-family homes for eight blocks to Buchanan St.

Character and surroundings Page 20

The north side is a series of dramatic greenswards (including the Marina Green) and yacht harbors with sweeping views to Alcatraz, the north bay and the East Bay. The bayfront is a public recreation corridor, intensively used for walking, jogging, bicycling, roller skating, fishing, sailing, picnicking, kite flying, sightseeing, pickup soccer games, and occasional large public gatherings.

Route 1/Park Presidio Blvd./Nineteenth Ave. From its ramped interchange with Doyle Drive, Route 1 runs south on a viaduct alongside the pretty Cavalry Stables valley, and quickly enters the MacArthur tunnel, which passes under the Presidio golf course. The road is a four-lane divided expressway. After passing Mountain Lake, the road leaves the Presidio and follows the city street grid south. It does so as a divided, heavily landscaped six-lane parkway. The road keeps this general character until it has passed through Golden Gate Park, where it becomes Nineteenth Ave., a mixed commercial and residential street.

The Findings

Legal issues and agency responsibilities and policies

The Doyle Drive Task Force recognizes that the City, Caltrans and the National Park Service all have legal and administrative responsibilities and internal policies which will affect this project. For the project to succeed, these public agencies will be required to cooperate closely.

City and County of San Francisco

Board of Supervisors' approval

The Marks Bill, SB 147[1], prohibits Caltrans from widening Doyle Drive to more than six lanes of 12 feet width each, with a concrete median barrier, without the specific approval of the San Francisco Board of Supervisors.

The Board's approval is not required for Caltrans to build its alternative proposal, a six-lane road that does not provide the existing connections between the Marina district and State Route 1/Park Presidio Blvd. However, the Board still retains a veto of the project, because it would have to approve the addition of emergency shoulders, which Caltrans would require in its design.

[1] As amended, March 18, 1974. California Government Code.

City Master Plan

Several policies of Objective 5 of the Transportation Element of the City's Master Plan apply to Doyle Drive and the city streets which connect to it.

Objective 5 promotes street function and design which is consistent with the character and use of adjacent land. It balances meeting traffic demand with other purposes such as open space and pedestrian movement. It recognizes the necessity, in some cases, "to determine a maximum level of traffic for which street capacity will be provided, implying a tolerable level of congestion as a constraint, if other objectives of the city are to be attained."

Policy 3 says, "The existing vehicular capacity of the bridges, highways and freeways entering the city should not be increased and should be reduced where possible." It maintains the "established policy of limiting access into and through the city by automobiles." This policy is to work with others calling for "mass transit for commuter travel to San Francisco."

Policy 4 "Discourage[s] non-recreational and non-local travel in and around parks and along the shoreline recreation areas." Streets... "along recreational parts of the

Legal Issues Page 24

shoreline should function primarily for access to recreational facilities and for scenic driving, not as thoroughfares....They should offer opportunities for leisurely, scenic driving consistent with pedestrian, equestrian and bicycle movements along and across the street."

Prior injunction

In 1975, the San Francisco Board of Supervisors approved an interim plan while Doyle Drive was being redesigned. It called for three lanes in each direction and a movable median barrier. The Marin County Council of Mayors and Councilmembers and the County of Marin believed that the proposal would cause massive traffic congestion, with resulting increases in air pollution and consumption of gasoline. They obtained a temporary injunction to halt implementation of the plan. Based on this legal action, the Supervisors permanently halted implementation. With the project effectively dead, the injunction was dismissed on January 29, 1982. Thus, the injunctive order is not an impediment to any new project.

However, any party could request injunctive relief to halt a new project for sufficient cause. Generally such an injunction would be based on a failure to prepare an Environmental Impact Report, and to outline mitigation measures for any negative environmental impacts caused by the proposed plan. Any Doyle Drive plan must comply with federal and state environmental review statutes.

Caltrans

Since 1945, the state through the Department of Transportation (Caltrans) has been responsible for Doyle Drive's maintenance and operation. In planning a new facility, Caltrans is particularly concerned about its vehicle capacity and safety. Legislative authority requires that Caltrans fully agree with the design standards applied to the new facility. Caltrans acknowledges Doyle Drive's special setting as a roadway through a national park and has agreed to give special consideration in its evaluation and approval process to the important environmental and design objectives expressed in the Task Force's recommendations.

National Park Service

Easement

Doyle Drive presently lies on an easement on federal land which is managed by the U.S. Department of the Army. By September 1995 at the latest, before any new project would begin construction, management will transfer to the National Park Service. The NPS must consent to any new alignment or expansion of Doyle Drive, and provide the appropriate easement. It must approve all Doyle Drive modifications, and ensure that they conform to the Presidio General Management Plan.

Federal restrictions on highways in parks

Section 4(f) of the Department of Transportation Act[2] prohibits use of park land for projects such as highways unless "[t]here is no feasible and prudent alternative to the use of land from the property; and...[t]he proposed action includes all possible planning to minimize harm to the property resulting from such use."

Since the entire Presidio is park land, Section 4(f) will require that the new project minimize the use of land. However, it does not require that the new road structure follow the alignment of the existing structure, or be on the existing easement. Changes in alignment would be subject to federal historic preservation laws and NPS regulations. Their application would be case-by-case.

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[2] § 771.135. Federal Register / Volume 45, No. 212 , page 71984 / Thursday, October 30, 1980 / Rules and Regulations.

Structural conditions

Doyle Drive is 56 years old and Caltrans has determined that it needs to be replaced. The long term effects of heavy traffic and exposure to salt air have caused cracking, spalling, and general deterioration of the concrete portion of elevated structures, and corrosion of the reinforcing steel within. The steel trusses have also corroded, in areas that are inaccessible and difficult to maintain.

Caltrans recently completed rehabilitation of the concrete decks from the Route 1 interchange to Richardson Ave. and Marina Blvd. The low viaduct was coated with a thin polymer concrete overlay and the high viaduct was sealed with a polymer resin bonder-filler. These are maintenance measures. They will retard the rate of further corrosion and concrete deterioration, but will only add six to ten years to the service life of these decks.

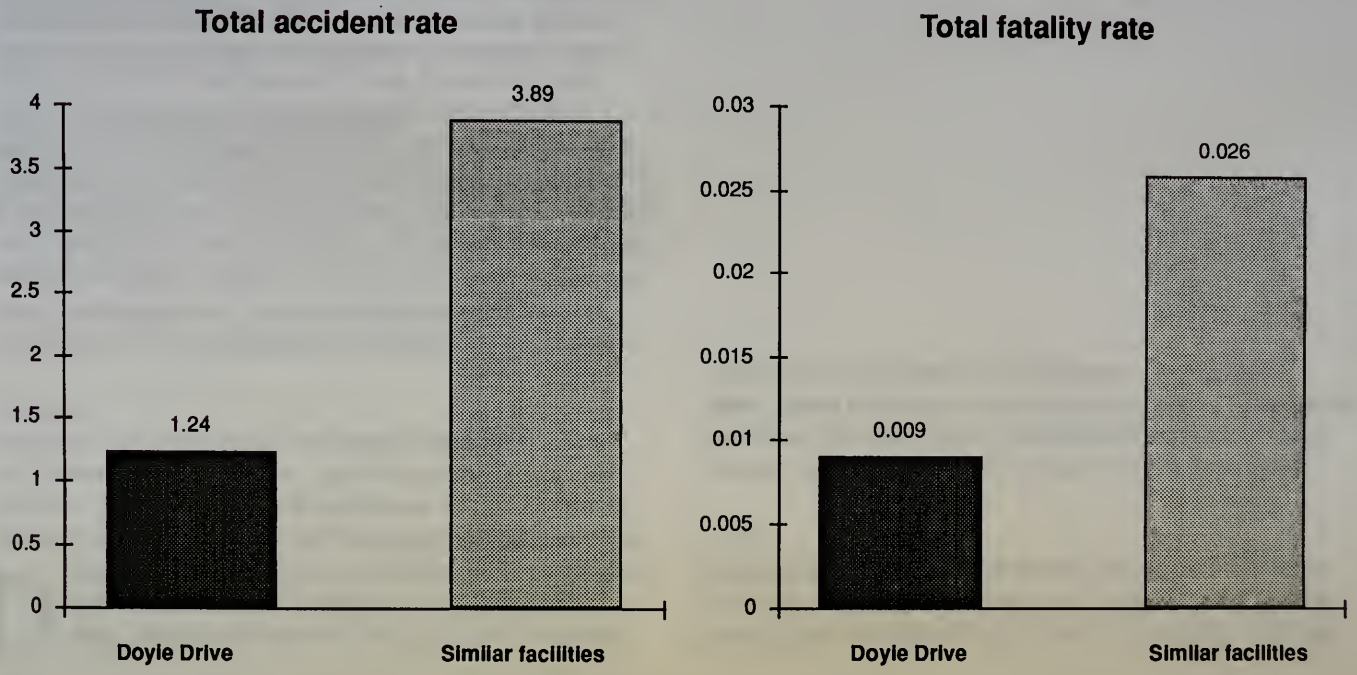
Caltrans has both viaducts scheduled for seismic retrofit projects in late 1993 and 1994. While that work will increase the seismic resistance of these bridges, it will not fix the problems of continued aging, which will eventually cause the structures to become seismically unsafe.

The Golden Gate Bridge is scheduled for seismic upgrading in the mid 1990's. It makes no sense for the bridge to survive a major earthquake minus its southern approach road.

Caltrans says that the Route 1 structure between Doyle Drive and the MacArthur Tunnel has similar aging problems. When Doyle Drive is rebuilt the Route 1 interchange will have to be replaced or upgraded.

How safe is Doyle Drive?

Compared to similar California highways,
Three years, 1981 through 1983
Rates per million vehicle miles
(Note that scales are different)



Source: Caltrans

Figure 10

Safety

Doyle Drive has many substandard roadway design elements— narrow lanes, no shoulders, no median barrier, complicated merging and lane change sections and exit ramps with tight radii. Traffic experts believe that the substandard design increases the potential for accidents, and many drivers perceive the road to be dangerous.

Despite these shortcomings, the accident and fatality rates on Doyle Drive are below the statewide averages for this type of roadway. During the three years from 1981 through 1983, both the total accident rate and fatality rates were about one-third of the statewide average rates for similar highways.[1] (Figure 10).

Lane width

Lanes of standard design are 12 feet wide. Doyle Drive's existing lanes are 9.5 to 10 feet wide. Modern commercial, fire/safety and specialized vehicles and buses can fill or even exceed that lane width. The resulting crowding enhances a driver's phobia, and can cause unsafe turning movements and unsafe stops. This, in turn, can lead to rear end and sideswipe accidents that increase congestion and the likelihood of additional accidents. When drivers make emergency stops or evasive maneuvers, there is less safety margin to allow them to stay in their traffic lanes.

Median barrier

The lack of a fixed median barrier on Doyle Drive allows errant vehicles to cross over into oncoming traffic. Since 1970, this has resulted in 20 head-on collisions on Doyle Drive causing major injuries and 20 deaths.[2] The lack of a barrier makes drivers next to oncoming traffic uneasy and nervous. When traffic is backed up in one direction and is light in the other, drivers have been observed to make illegal U turns, which can cause accidents.

Lane changes

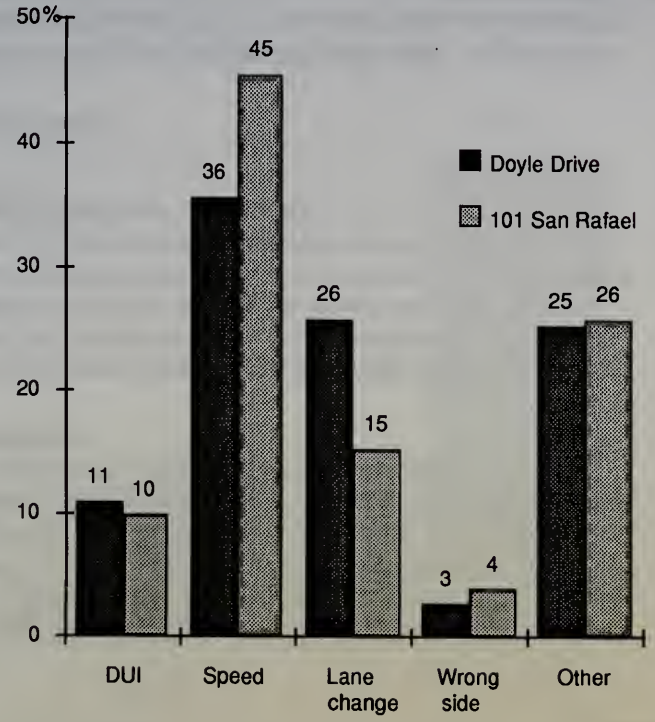
Any lane change or merge is a potential accident if it is conducted unsafely. Because the number of lanes varies along the length of Doyle Drive, drivers must make up to five merges.

[1] Caltrans, "Route Concept Report for I-480," September 1986, page 12.

[2] Press reports assembled by Joyce Pavlovsky, including 7 deaths for 1982-91. CHP recorded 12 deaths for same period.

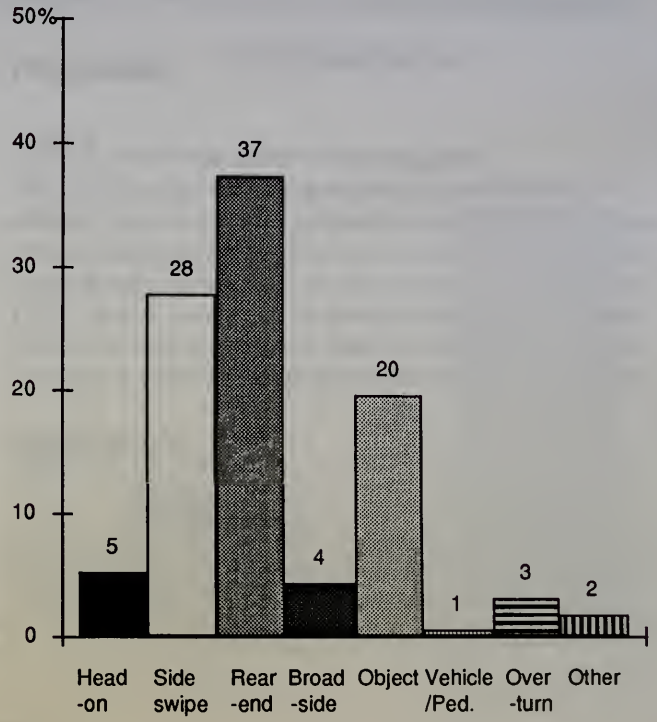
Primary causes of collisions, by percent

Doyle Drive vs. Hwy. 101 near San Rafael
1989-1991



Types of collisions on Doyle Drive, by percent

1982-1991



Source: CHP Statewide Integrated Traffic Reporting System

Figure 11

If the on ramp from Route 1 northbound to Doyle Drive eastbound becomes congested, traffic can back up the ramp and onto Route 1. If the backup reaches into the MacArthur Tunnel, the vertical curve of the tunnel prevents drivers from seeing far enough ahead to slow or stop in time. To prevent this, Caltrans has the Route 1 to Doyle Drive eastbound ramp flow traffic into its own lane on Doyle Drive.

Merging and required lane changes

In addition, Doyle Drive's on and off ramps are too closely spaced to meet current design standards, particularly when traffic is heavy. To decrease conflicting merges and lane changes associated with closely spaced ramps, Caltrans' policy is that when there is less than 2,000 feet from the end of a merge on to the beginning of a merge off, a full lane (called an auxiliary lane) must connect the ramps.

Roadway design

Different types of roadways are designed for different vehicle speeds. Generally, this "design speed" is 10-15 miles per hour above the road's eventual posted speed limit. The purpose is to build in a safety factor. For example, urban freeways are designed for speeds of 60-70 miles per hour, while expressways like Doyle Drive are built to accommodate speeds of 50-70 miles per hour.

Traffic speed

Traffic speed also affects the safety of a roadway. Caltrans says the speed which maximizes both the capacity and the safety of a road is 40-45 miles per hour. At higher speeds drivers must be more alert. Speeds slower than 40 miles per hour tend to result in stop-and-go conditions which are inherently more prone to accidents than a free-flowing roadway.

Shoulders

Without shoulders, Doyle Drive lacks a safe place for vehicles to move out of the flow of traffic and wait for aid; for law enforcers to monitor traffic and make enforcement stops; or for emergency vehicles to use for fast access to problem sites when the road is congested. When the highway is being repaired, a shoulder reduces congestion by serving as a detour route.

Accidents

Doyle Drive accident information for 1982-1991 is presented in Figure 11. According to the California Highway Patrol, the high percentage of rear end collisions is typical of a facility which experiences heavy congestion. The primary collision factors are unsafe lane changes and unsafe speed for prevailing conditions.

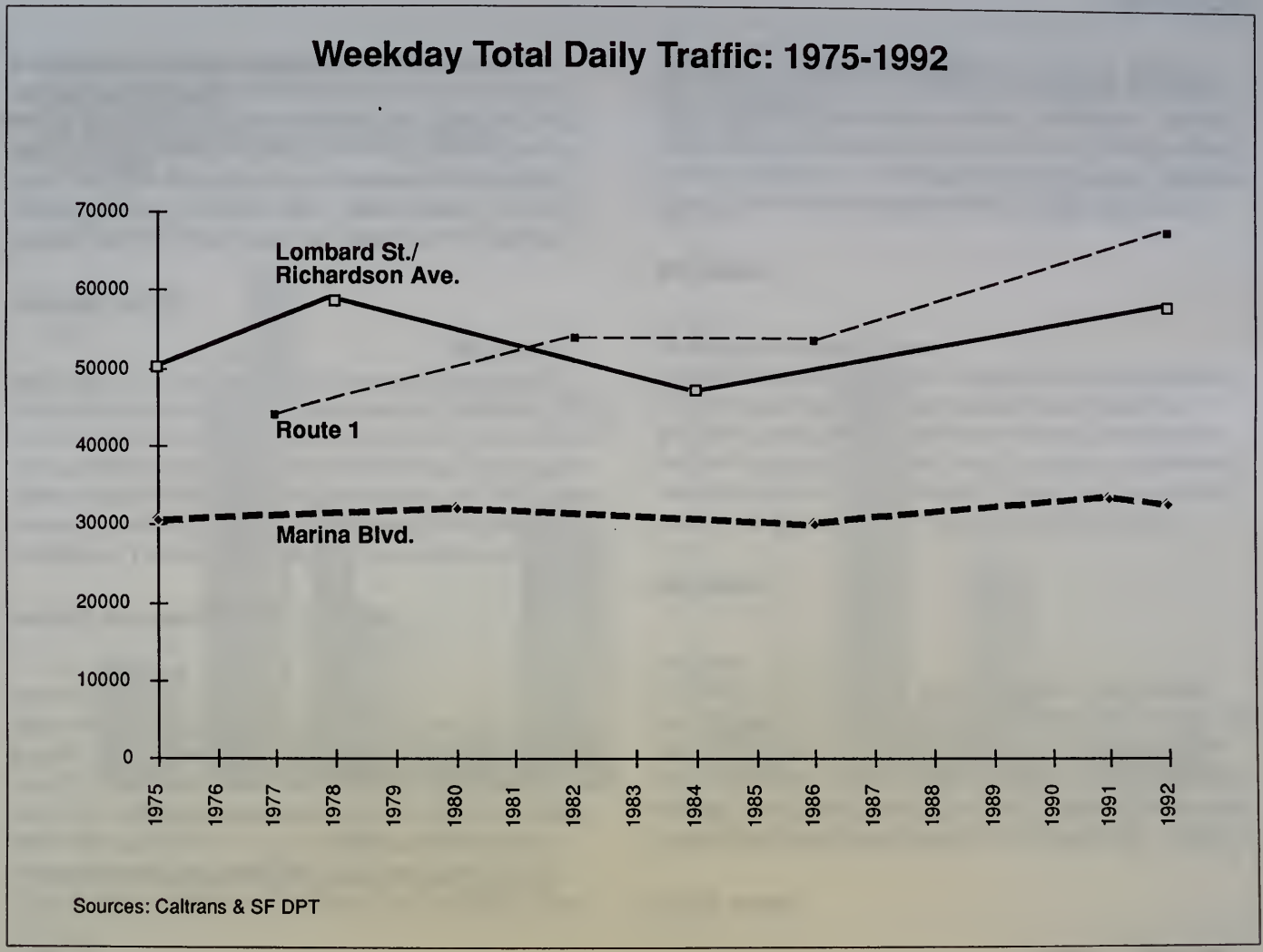


Figure 12

Present traffic Page 32

Present traffic conditions and historic trends

In examining traffic statistics, it is easy to get lost in the numbers. To pick its way through the maze, the Task Force sought the answers to these questions:

- Where is traffic trying to go?
- What has changed in recent years?
- How much traffic is there, and when is it heaviest?
- What constrains traffic capacity?

How accurate are the traffic data?

Data on existing traffic conditions come from several sources, and vary widely in how frequently they have been collected. As a result, there are some gaps and minor discrepancies in available data, but the traffic experts on the Doyle Drive Task Force conclude that overall patterns are broadly consistent. All figures in this summary have been rounded. The precise counts may be found in the appendix.

Where traffic flows

Traffic uses Doyle Drive to make these connections:

- Of all daily traffic, 52 percent flows between the Golden Gate Bridge and downtown San Francisco and the northern waterfront, via Richardson Ave./ Lombard St. and Marina Blvd./Bay St.;
- 35 percent flows between the Golden Gate Bridge and the City's western districts and peninsula points via Route 1;
- 13 percent is intracity traffic, flowing between western San Francisco neighborhoods and the Marina and other northern waterfront destinations.

East of Route 1, Richardson Ave. carries 64 percent of all morning commute traffic from Doyle Drive, and Marina Blvd. carries 36 percent. During the evening commute, Richardson Ave. carries 58 percent and Marina Blvd. carries 42 percent.

Historic flows are shown in Figure 12. Current flows are shown in Figure 13.

What has changed in recent years?

Golden Gate Bridge: between 1980 and 1988 average daily traffic gradually increased 25 percent, then declined

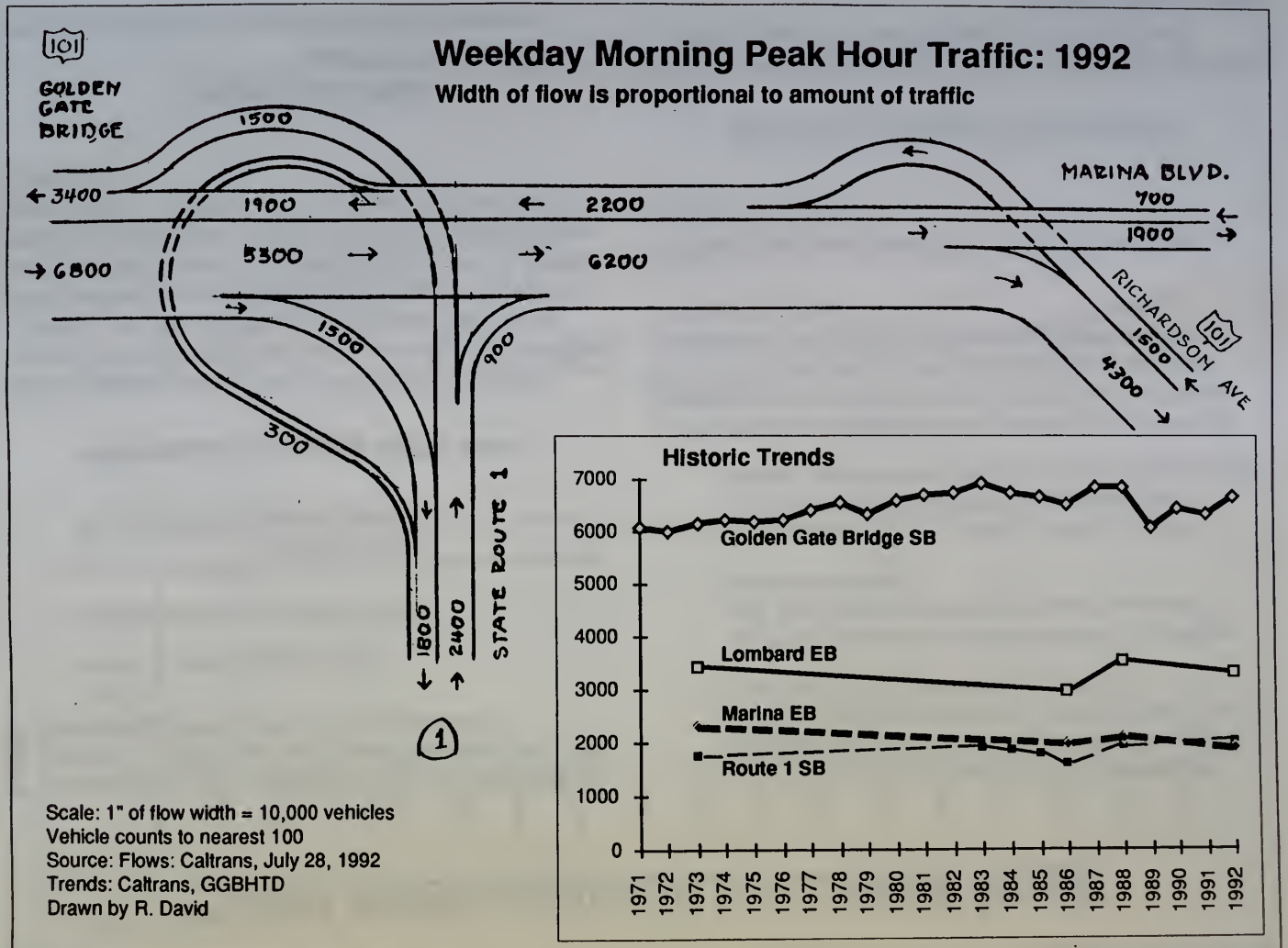

Weekday Morning Peak Hour Traffic: 1992
Width of flow is proportional to amount of traffic
GOLDEN GATE BRIDGE
1500
3400
1900
2200
MARINA BLVD.
700
1900
5300
6800
6200
1500
900
RICHARDSON AVE
1500
4300
300
1800
2400
STATE ROUTE 1
1
Historic Trends
7000
6000
5000
4000
3000
2000
1000
0
Golden Gate Bridge SB
Lombard EB
Marina EB
Route 1 SB
1971
1972
1973
1974
1975
1976
1977
1978
1979
1980
1981
1982
1983
1984
1985
1986
1987
1988
1989
1990
1991
1992
Scale: 1" of flow width = 10,000 vehicles
Vehicle counts to nearest 100
Source: Flows: Caltrans, July 28, 1992
Trends: Caltrans, GGBHTD
Drawn by R. David

Figure 14

slightly (1992 all day volume: 127,000 vehicles).

Marina Blvd.: between 1975 and 1992, average daily traffic increased only slightly (eight percent). There were no changes in peak volumes. (1992 all day volume: 33,000 vehicles).

Richardson Ave.: between 1975 and 1992, average daily traffic and peak volumes were flat. Data are spotty. (1992 all day volume: 58,000 vehicles).

Route 1: between 1975 and 1992, average daily traffic increased 50 percent, the morning peak increased 25 percent, and the evening peak increased 30 percent. (1992 all day volume: 68,000 vehicles).

Route 1 exhibits the most significant change, absorbing most of the increase in bridge traffic. The remarkable growth in Route 1 traffic in recent years continues south down 19th Avenue toward I-280, suggesting that a substantial proportion of the increase is through traffic between the North Bay and the Peninsula. Route 1 also distributes traffic in western San Francisco neighborhoods, and possibly to downtown via the Geary Blvd. corridor.

Peak times: how much traffic, and when?

As one would expect, on the Golden Gate Bridge, Doyle Drive and connecting city streets traffic reaches its maximum during the weekday morning and afternoon commute periods. On weekends, these roads also have significant midday peaks of recreational traffic.

Morning peak hour conditions

Southbound morning peak traffic on the Golden Gate Bridge grew 13 percent between 1971 and 1988, then declined slightly. Peak traffic varies seasonally, but typically totals about 6,700 vehicles per hour. Of that total, one quarter (1,600 vehicles) exit to Route 1. The rest continue eastbound on Doyle Drive, joined by 900 vehicles from Route 1. Of all the vehicles approaching the Marina district, 64 percent (3,300 vehicles) use Richardson Ave., and 36 percent (1,900 vehicles) exit to Marina Blvd. The relative split in traffic volumes between these two routes for all weekday time periods has not changed over the past twenty years.

In the reverse direction during the morning peak, volumes are relatively light with one exception. Traffic northbound on Route 1 (2,400 vehicles) actually exceeds the southbound volumes. These flows are shown in Figure tk.

Intracity traffic entering from Route 1 to the Marina District represents 15 percent of Doyle Drive's eastbound flow. These flows are shown graphically and historically

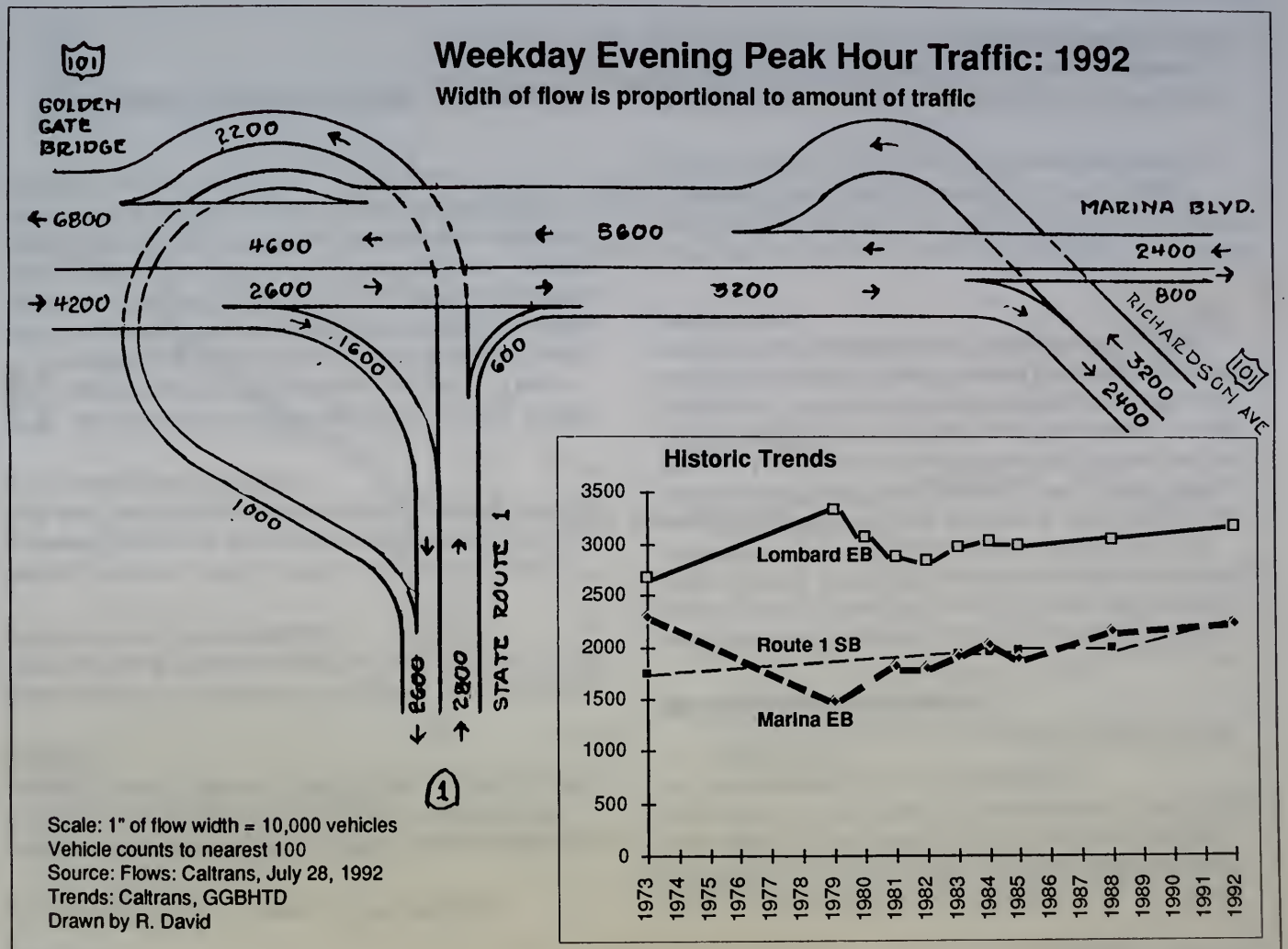


Figure 15

Present traffic Page 36

Evening peak hour conditions

The northbound afternoon peak traffic volume on Doyle Drive is nine percent less than the morning peak. About one-third of all traffic to the bridge flows from Route 1 (2,200 vehicles). In the Marina district, traffic volumes westbound on Richardson Ave. are similar to the morning peak. But from Marina Blvd., 2,200 vehicles enter Doyle Drive, 16 percent more than the morning volume. As a result, vehicles entering Doyle Drive from Marina Blvd. increases from 36 percent to 42 percent.

In the reverse direction during the afternoon peak, volumes are relatively light with one exception. Traffic southbound to Route 1 (2,600 vehicles) almost equals the northbound volume.

Intracity traffic exiting to Route 1 from the Marina District represents 17 percent of Doyle Drive's westbound flow.

These flows are shown graphically and historically in Figure 15.

Weekend peak hour conditions

Doyle Drive, the Golden Gate Bridge and the connecting city streets also experience significant midday peak hours on weekends. For Route 1, weekend and weekday peak hour volumes are virtually identical. On Richardson Ave., midday weekend peak hour volumes are about 60-65 percent of weekday peaks. On Marina Blvd., the westbound weekend peak volume is 63 percent of the weekday peak, and the eastbound weekend peak is 50 percent of the weekday peak. Thus, each of these roadways carries substantial weekend traffic, but only on Route 1 do peak hour volumes compare to weekday peaks.

No historical weekend data are available for Marina Blvd., Richardson Ave. or Route 1.

These flows are shown graphically in Figure 16.

Average daily traffic patterns

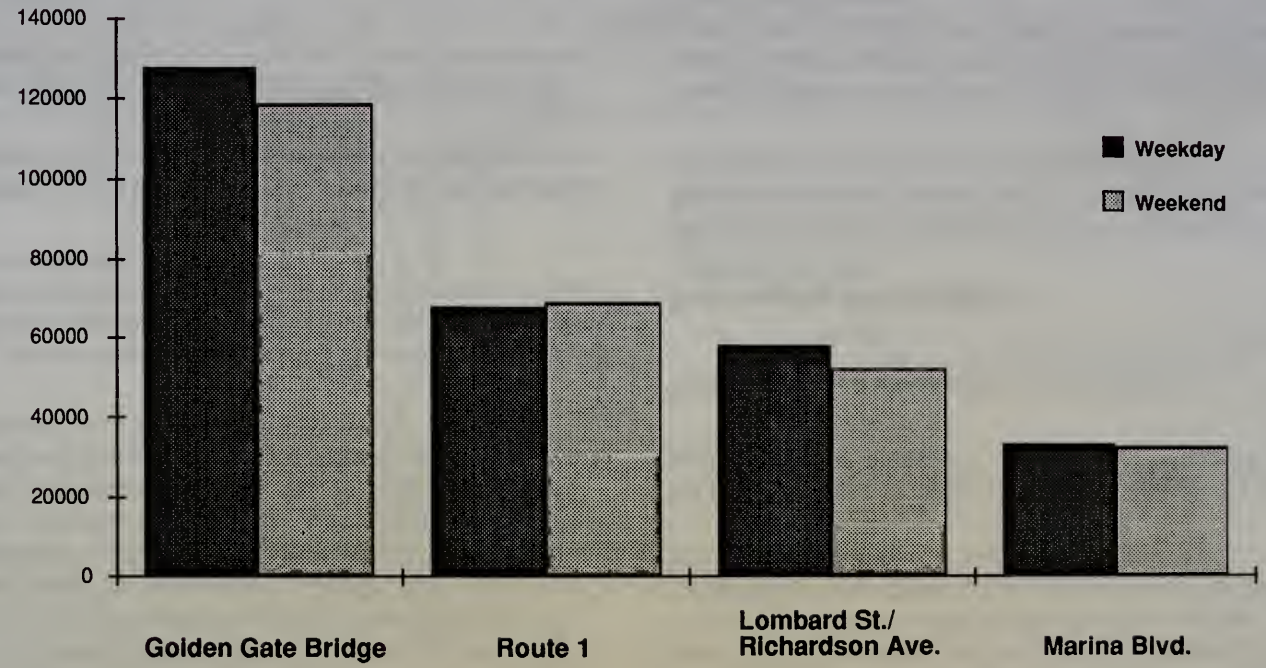
The peak hour figures described above measure traffic flow during a road's busiest hours. Average daily traffic data measure how busy the road is all the time.

Route 1 has heavy daily flows in both directions. As a result, its daily volume of 68,000 vehicles is substantially greater than Richardson Ave. (58,000 vehicles) or Marina Blvd. (33,000 vehicles).

Richardson Ave. carries 64 percent of daily traffic between Doyle Drive and the Marina district. Marina Blvd. carries 36 percent. But the flows are not balanced: Richardson Ave. carries 2,000 more vehicles eastbound than westbound, while Marina Blvd. carries 2,500 more vehicles

Weekend and Weekday Traffic: 1992

Total daily traffic flows



Source: Caltrans

Figure 16

westbound than eastbound. (See figures 12 and 13).

What constrains traffic capacity?

The number of lanes

During weekday peak periods, Doyle Drive and the Golden Gate Bridge operate with a reversible center lane. This provides four lanes in the peak traffic direction, and two lanes in the reverse direction. (Since August 1991, the evening commute has operated successfully with only three lanes westbound on Doyle Drive.)

From Doyle Drive, one eastbound lane and one westbound lane feed south into Route 1, which has two lanes in each direction through the Presidio and three lanes in each direction in the Richmond District. From northbound Route 1, one lane feeds eastbound Doyle Drive, and two lanes feed westbound to the bridge.

From Doyle Drive, three lanes feed eastbound into Richardson Ave., which has three lanes in each direction. From westbound Richardson Ave., two lanes feed westbound Doyle Drive.

From Doyle Drive, two lanes feed eastbound into Marina Blvd. during the morning commute. At other times, there is only one exit lane. Marina Blvd. has two lanes in each direction. From westbound Marina Blvd., one lane feeds westbound Doyle Drive.

The capacity of each lane

Even though Doyle Drive and the Golden Gate Bridge have narrow lanes which reduce capacities, each facility carries about 1,700 to 1,800 vehicles per lane during the weekday peaks. The Golden Gate Bridge toll plaza sets the capacity limit and meters the volume of eastbound traffic onto Doyle Drive. In practical terms, during the existing morning commute both roadways are at capacity.

The connecting city streets set the capacity limits at the east and south ends of Doyle Drive. At peak hours, these city streets already are at capacity.

Route 1 through the Richmond district, Richardson Ave. and Marina Blvd. each have multiple intersecting streets which limit capacity. Normally, these city streets would carry 600-900 vehicles per lane per hour. But because their signals are set to favor peak direction through traffic, in actual practice Route 1 through the Richmond district carries about 800-900 vehicles per lane per hour in each direction during all peak times. The 19th Avenue/Lincoln Way/Crossover Drive intersection in Golden Gate Park acts as the capacity limit of Route 1.

Richardson Ave. carries almost 1,100 vehicles per lane per hour in the peak direction during both the weekday morning and afternoon commutes. Traffic turning at the inter-

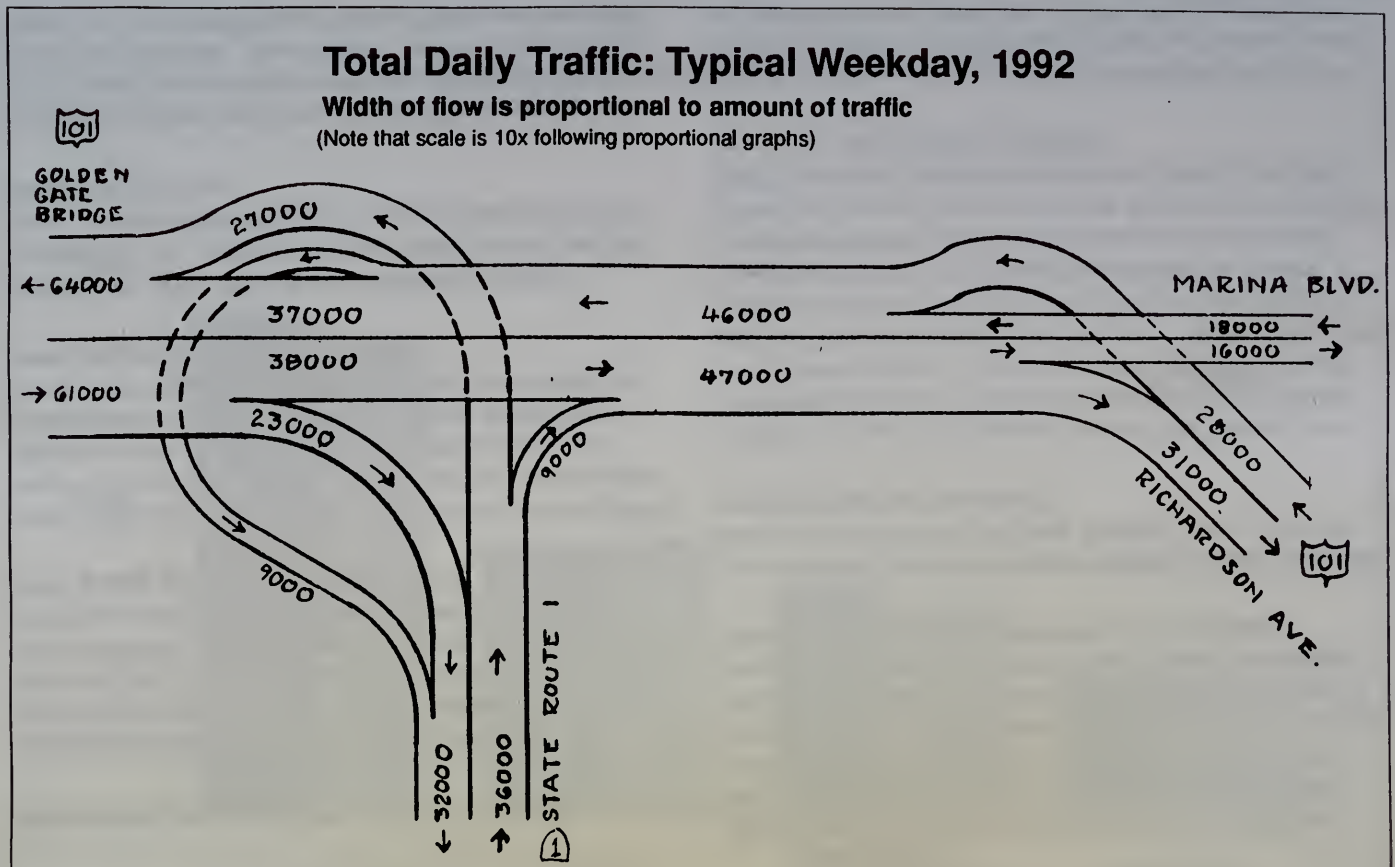


Figure 13

Present traffic Page 40

section of Lombard St. and Van Ness Ave. acts as the capacity limit for this route. Marina Boulevard carries about 1,000 vehicles per lane per hour eastbound during the morning peak hour and about 1,100 vehicles per lane per hour during the afternoon peak hour. The complex downstream intersection at Bay St. and Laguna St. acts as the capacity limit of this route.

Thus there are major traffic bottlenecks at both ends of Doyle Drive. In the morning commute, the Golden Gate Bridge toll plaza constrains how much traffic can enter Doyle Drive, and the capacities of the connecting city streets further constrain how much traffic can exit. In the evening commute, the connecting city streets primarily limit how much traffic can reach Doyle Drive; slow traffic at the bridge toll plaza, the nearby merge of northbound Route 1 traffic and the bridge itself further constrain how much traffic can exit.

The Golden Gate Bridge, Doyle Drive, and each of the connecting city streets form an interconnected transportation network. Significant changes to one component of this network, such as a diminution of the role of one of the connecting city streets, would be likely to have substantial impacts on the existing fragile balance, since each of the network's roadways are currently operating at capacity during peak hours.

Future traffic conditions

Traffic volume

The most significant determinant of future traffic volume on Doyle Drive is the Golden Gate Bridge and the city streets to which Doyle Drive connects. At peak hours, all of these roads are essentially at capacity, and none are likely to be expanded. Thus, while peak times could lengthen, the peak capacity of Doyle Drive cannot increase.

A further restriction is the long standing San Francisco Master Plan policy that there be no increase in the capacity of highways in and out of the city. Future increases in demand, if any, are to be absorbed by mass transit or other means.

San Francisco's policy contrasts with that of Caltrans, which aims to build highways to meet projected future demand. Future traffic demands are hard to predict. In the past, projections for Doyle Drive and the Golden Gate Bridge have proven to be significantly higher than have actually occurred. At present, the Golden Gate Bridge District predicts that traffic volumes across the bridge will not increase, and may continue their slight decline.

Changes in traffic volumes can be affected by availability of mass transit alternatives, new pricing strategies on the Golden Gate Bridge, reduction of employee parking subsidies by San Francisco companies. These variables have unknown effects.

New Presidio traffic destinations

The conversion of the Presidio to a national park clearly will have some effect on the destination of some Doyle Drive traffic. Currently, most traffic on Doyle Drive has no clearly defined way to enter the Presidio without traveling on local streets in the Marina district or exiting at the bridge toll plaza. To address this problem, the Task Force recommends a Presidio entrance and exit from Doyle Drive.

At the Task Force's request, the National Park Service made some very preliminary projections of Presidio-related use of Doyle Drive. (See Figure 17).

According to the National Park Service, an increase in Presidio-related Doyle Drive traffic would result in a decrease of traffic congestion from other local streets.

Future Presidio traffic on Doyle Drive[1]

Preliminary estimates

Year	1992	2010 (additional vehicles per day)
	6,000 vehicles per day	3,000 VPD from elsewhere 7,000 VPD between Presidio interchange and bridge overlook.[2]
All day: Peak hours:	7% of total Doyle Drive traffic 5-6% of peak hour traffic	17% of total Doyle Drive traffic 13-16% of peak hour traffic
If no Presidio interchange:		9,000 vehicles per day 10% of total Doyle Drive traffic

[1] Assumptions:
Vehicle means a one-way vehicle trip.
1% per year regional traffic growth rate included in Presidio projections.
No other growth of Doyle Drive traffic.

[2] Totals an additional 10,000 VPD, plus or minus 2-3,000 vehicles per day.

Effects of a direct Presidio interchange

The Task Force recommends that the new Doyle Drive include direct access to the Presidio via an interchange near the Main Post. As a result, according to the National Park Service, Presidio-bound traffic would tend to use Doyle Drive instead of local Marina district streets, thus reducing neighborhood traffic congestion particularly at the Lombard St. and Gorgas Ave. gates.

Compared to 1992, by the year 2010 NPS estimates that 3,000 additional vehicles per day would use Doyle Drive to travel between the Presidio and other places. Another 7,000 vehicles per day would use Doyle Drive to travel between the Presidio interchange near the Main Post and the scenic overlook near the bridge toll plaza. In other words, these 7,000 vehicles would use Doyle Drive for travel within the Presidio. If there is no Presidio interchange, these vehicles would instead use local Presidio roads to reach the bridge overlook.

Figure 17

Effects on the Presidio of closing Doyle Drive to intracity traffic.

What happens if Caltrans eliminates the Doyle Drive/ Route 1 connecting ramps for intracity traffic, as it says it will do if the new road has only six lanes? The National Park Service estimates that 18,000 vehicles per day that use this route to travel between the Marina and Richmond district would be displaced. Forty to seventy percent then would use the Presidio's local road network to get cross town. The remainder would use city streets.

Other ways to reach the Presidio

In years to come the Presidio national park will certainly attract more visitors than now. They will not need to come in private automobiles. Planning guidelines adopted three years ago after public hearings call for a deemphasis on private automobile use to and within the Presidio, and an emphasis on pedestrian, bicycle, public transit and alternative transport access. While the National Park Service plan for the Presidio is not complete, it is expected to strongly endorse non-automotive access.

Future traffic Page 44

Alternatives to building for peak demand

San Francisco policy is to find alternative ways to handle increased traffic demand. The Task Force examined a number of potential alternatives. Though the Task Force did not take positions on all of the alternatives, the City might wish to explore them more fully.

City policy

Caltrans' proposals for rebuilding Doyle Drive are based in part on a philosophy to design its highways to handle estimated future peak traffic volumes. San Francisco's policy is in sharp contrast. The City Master Plan calls for road designs that are compatible with their surroundings, even if this means accepting some traffic congestion at peak periods. Designing for peak demand means roads will have excess capacity at all non-peak times, which encourages more traffic. The City policy is in effect to find a balance between optimal traffic flows, and other important values of civic character and quality of life.

Increase Muni and other public transit service

This is also the City's policy. Current Muni service to the Presidio and the Exploratorium is limited. As these destinations become more popular, the number of routes and frequency of service should increase.

Private bus and tour services could also be encouraged. The Board should be aware, however, that the noise, vibration and exhaust of diesel buses cause many residents to vociferously object to these effective alternatives to automobiles. The Board could push for tighter federal noise and emissions standards for diesel vehicles.

The Presidio could be one destination of a water taxi service serving the Ferry Building, Fishermans Wharf and Fort Mason.

Modify Caltrans' design standards

Caltrans designs adhere to a textbook of national traffic engineering standards. Two Task Force members noted that the Federal Highway Administration may approve design exceptions. The National Park Service says that FHWA-approved alterations have led to some beautiful parkway projects in other national parks. Caltrans responded that very few exceptions are approved; that it sometimes modifies standards when a highway is added to, but that all new structures must meet national standards. Caltrans concedes that a major concern is its poten-

Alternatives Page 45

tial exposure to lawsuits, and that it would not be so insistent on building its standard design if another entity accepted legal liability.

Three lanes westbound, with no auxiliary lane

Since city streets and the Golden Gate Bridge are the constraints in limiting the flow of westbound traffic during the evening commute, it was suggested that four westbound lanes on Doyle Drive could create excess storage capacity, which is unneeded. Can three lanes westbound smoothly feed the bridge? That proves to be the current policy of the Bridge District which, since August 1991, has provided only three westbound lanes on Doyle Drive during the evening commute. Traffic flows smoothly into four lanes on the bridge.

Test the effects of three lanes eastbound, with no auxiliary lane

During the morning commute, both the Golden Gate Bridge and Doyle Drive provide four lanes eastbound. Because the bridge toll plaza acts as a flow meter, Caltrans and the bridge district could test whether four lanes on the bridge and three lanes on Doyle Drive can handle traffic demand without undue congestion. This configuration has never been tried, and the test would cost almost nothing.

Institute peak pricing

On Doyle Drive, four lanes are only required eastbound during the morning commute. To reduce the peak demand, the Bridge District could charge peak period single occupant commuters a premium toll. Those traveling at off-peak hours would pay less than the present $3. The technique has been used successfully for 25 years by the electric power industry to defer peak electrical demand by 21,000 megawatts, saving an estimated $14.7 billion. For decades, customers have accepted a similar pricing strategy for telephone service.

A New York Times story on the subject explained that:

> *America...rations scarce space on roads at rush hour the way the Soviet Union used to ration sausage: with lines.*

Using peak pricing to control traffic congestion, a certain fraction of drivers will discover that altering their commute habits is a better value than paying extra to sit in traffic.

The Task Force also acknowledged the public's reluctance to accept higher tolls.

Provide mass transit

While Task Force members overwhelmingly support mass transit, after long discussions we were unable to recommend how to provide it. The problem is that nobody knows what route a mass transit system might take, or what its physical needs might be. For example, a recommendation to include mass transit in the Doyle Drive right-of-way could add 40 feet to its width, with no assurance of its future usability. Frustrated, the best we can do is to endorse the concept without specifying a route.

Use a movable barrier

The idea of a movable barrier that will prevent head-on accidents has been looked at many times over the past decades, both for Doyle Drive and the Golden Gate Bridge. The last study was done by the Traffic Institute of Northwestern University for the Bridge District in 1985. The study found that presently there is no workable movable median barrier that will acceptably prevent head-on collisions and not cause other types of injury accidents.

The Recommendations

Recommendations for a new Doyle Drive

Traffic recommendations

1. Traffic lanes should be 12 feet wide, with 8 foot shoulders on the right side in each direction.

Vote: *Yes*- 8; *No*- 4 (Fontanello-at large; Girardot-Marina; Rolfe-Environmental; Root-SPUR); *Abstain*- 1 (McKean-NPS).

At issue: Noes preferred emergency turnouts instead of continuous emergency shoulders, out of concern that shoulders might later be converted to additional lanes. Law enforcement representatives argued that turnouts were dangerous.

2. Shoulders shall be for emergency use only; appropriate mandatory regulations and design features shall be adopted to permanently prevent use of the shoulders as traffic lanes.

Vote: *Yes*- 8; *No*- 4 (Fontanello-at large; Girardot-Marina; Rolfe-Environmental; Root-SPUR); *Abstain*- 1 (McKean-NPS).

At issue: Yeas preferred this way to foreclose future opportunities to convert the shoulders to traffic lanes. Noes wanted emergency turnouts to be evaluated.

3. Include a fixed center barrier.

Vote: *Yes*- 11; *No*- 2 (Fontanello-at large; Girardot-Marina); *Abstain*- 0.

At issue: A fixed center barrier prevents head-on collisions. It does not allow a reversible center lane to handle peak traffic flows.

4. Design Doyle Drive for a posted speed limit of 45 mph.

Vote: *Yes*- Unanimous.

At issue: Maintain the existing posted speed limit, and design connecting ramps for slower speeds, in keeping with the character of a scenic parkway.

5. Minimize the use of park land for connections to other roadways.

Vote: *Yes*- Unanimous.

At issue: Concern that connecting ramps be designed for merges appropriate to a 45 mph posted highway speed. Desire to avoid high speed connecting ramps with wide radii.

6. Maintain all existing access between State Route 1 and Doyle Drive.

Vote: *Yes*- 10; *No*- 3 (Girardot-Marina, Fontanello-at large, Edelman-CHP); *Abstain*- 0.

At issue: Caltrans' position is that connections between State Route 1 and the Marina district can only be provided if there are continuous auxiliary lanes in both directions between State Route 1 and the new Presidio interchange. Yes votes want those connections even though the Task Force prefers on ramps merging into the right hand traffic lane, and off ramps later branching from the traffic lane, instead of continuous auxiliary lanes.

7. Provide three lanes eastbound and two lanes westbound for the Richardson Ave. ramps, and one lane eastbound and one lane westbound for the Marina Blvd. ramps, at their narrowest points.

Vote: *Yes*- 10; *No*- 3 (McVey-at large; Epstein-Richmond; Root-SPUR); *Abstain*- 0.

At issue: Richardson Ave.: maintain the existing ramp lane configuration, which is working well. Marina Blvd.: maintain the existing lane configuration westbound, but reduce the eastbound lanes from two to one, to conform with the City's Master Plan to discourage non-recreational and non-local travel in and around parks and along the shoreline recreation areas.

8. Provide three continuous lanes in each direction between State Route 1 and the split to Richardson Ave. and Marina Blvd. The Task Force prefers that there not be continuous auxiliary lanes between State Route 1 and the proposed Presidio/Marina Blvd. interchange. Instead, provide the following merge lanes to safely accommodate traffic movements:

- **onto (eastbound) and off (westbound) Doyle Drive at State Route 1,**
- **the westbound merge onto Doyle Drive from Richardson Ave. and Marina Blvd. and,**
- **a new direct Presidio national park exit (eastbound) and entrance (westbound).**

Each of these merge lanes should be creatively designed to minimize its length while ensuring safety. Appropriate design and engineering of merge lanes should be determined based on actual field tests in early 1993 which examine the impacts of three peak direction lanes on Doyle Drive with four peak direction lanes on the Golden Gate Bridge, and various lengths for each merge lane segment.

Vote: *Yes*- 9; *No*- 5 (Epstein-Richmond; Edelman-CHP; Stevens-SFPD [substitute]; Spotswood-Bridge Dist.; Root-SPUR); *Abstain*- 0.

At issue: The identified merge lanes are needed to safely accommodate traffic merges, but should not be used to justify overbuilding Doyle Drive. A clear policy statement is needed to ensure that these merge lanes are sensitively designed to address genuine safety concerns and are not used as an excuse for capacity increases. In practice, provi-

sion of a separate eastbound exit into the Presidio may require a continuous auxiliary lane between the State Route 1 on ramp and this exit, but the appropriate treatment should be decided based on actual tests, rather than postulated in advance.

Noes felt that Caltrans' general design standards should apply, which would require continuous auxiliary lanes, or were concerned that particularly the eastbound auxiliary lane would be needed to prevent backups toward Route 1 and the bridge.

9. The appropriate design of Doyle Drive should be determined based on actual field tests in early 1993 which examine the impacts of three peak direction lanes on Doyle Drive with four peak direction lanes on the Golden Gate Bridge, and various lengths for each merge lane segment.

The purpose of the field test is to determine the appropriate safety features of the merge lanes, not to determine ways to increase or assess road capacity.

The tests should examine actual safety and operating conditions including:

- **consideration of whether queuing extends back to the Golden Gate Bridge toll plaza;**
- **the extent of queuing on Route 1 and on city streets;**
- **how safely merges occur on Doyle Drive.**

Vote: *Yes*- Unanimous.

At issue: Concern was expressed that Recommendation 8 could result in unintended effects, in that Caltrans would customarily apply its design standards in interpreting field test data. Caltrans has already stated that three lanes plus a continuous merge or auliliary lane is needed on each side. This is not necessarily the Task Force's position. The existing lanes are carrying more traffic than they were designed to carry. If the new lanes are widened to 12 feet, a greater number of cars may be accommodated in

10. Provide direct access between the Presidio and Doyle Drive, such as an interchange. Further evaluation is needed to determine the design and location of the interchange. The entrance/exit should be designed to prevent an increase in traffic in adjacent neighborhoods due to an increase in Presidio traffic.

Vote: *Yes*- 8; *No*- 3 (Stevens-SFPD [substitute]; Edelman-CHP; Spotswood-Bridge Dist.); *Abstain*- 2 (Wycko-SF DCP; Pavlovsky-Marin).

At issue: Almost all designs located an interchange north of the Main Post. There was interest to locate it west of the cemetery and separate it from the Marina Blvd. ramps, but this placed the interchange too close to the Route 1 ramps. We viewed many interchange designs, one by Mr. Painter being the most compact, but concluded that additional studies might bring further improvements.

11. Emphasize the Richardson Ave./Lombard St. route as the designated U.S. 101 corridor through design features that maintain its existing share of traffic.

Vote: *Yes*- 13; *No*- 0; *Abstain*- 1 (Edelman-CHP).

12. Design the Richardson and Marina exits from Doyle Drive to include new signalized intersections in the vicinity of the Palace of Fine Arts and west of existing residences. This would extend the character of city streets westward to the transition to Doyle Drive, but not change the legal designation of U.S. 101. The intent is to alter the character of the roadway, to slow in particular eastbound motorists, allow for pedestrian circulation, potentially improve vehicular access to the Palace of Fine Arts and the Presidio, and provide for a transition from parkway to city street west of existing residences.

Vote: *Yes*- 10; *No*- 0; *Abstain*- 2 (Stevens-SFPD [substitute]; Edelman-CHP).

Design recommendations

13. Include landscaping and other features that would make the roadway compatible with and sensitive to the national park and adjacent residential neighborhoods.

Vote: *Yes*- 11; *No*- 0; *Abstain*- 1 (Edelman-CHP).

14. Design to maximize views for motorists, park users and from nearby neighborhoods.

Vote: *Yes*- 12; *No*- 0; *Abstain*- 1 (Edelman-CHP).

At issue: Emphasize an important aspect of a scenic parkway design.

15. Design the roadway and structure to be æsthetically pleasing.

Vote: *Yes*- Unanimous.

At issue: an important mitigation of the impact of the project in the national park.

16. Design Doyle Drive to minimize the height of vertical profiles.

Vote: *Yes*- Unanimous.

At issue: Avoid view-blocking elevated structures, such as the existing low viaduct.

17. The reconstructed Doyle Drive should be sensitive to the natural and cultural features of the Presidio. Preserve Presidio resources to the extent possible while taking into account competing goals.

Vote: *Yes*- 10; *No*- 3 (Fontanello-at large; Girardot-Marina; Root-SPUR); *Abstain*- 1(McKean-NPS).

At issue: Concern that stringent interpretation of historic preservation rules (such as removal or relocation of minor buildings) should not block otherwise preferable alignments and design features. Others felt that preservation took precedence.

18. Recognize the potential for restoration of wetlands and riparian corridors in the Crissy Field area.

Vote: *Yes*- 13; *No*- 0; *Abstain*- 1 (Edelman-CHP).

19. Do not provide a parallel, continuous pedestrian and bicycle access along the Doyle Drive right-of-way, if an equivalent access is provided outside the Doyle Drive right-of-way. Pedestrian and bicycle access across Doyle Drive shall be established at appropriate locations consistent with safety and aesthetic considerations.

Vote: *Yes*- 11; *No- 1* (Rolfe-Environmental); *Abstain*- 1(McKean-NPS).

At issue: Walking or bicycling right next to a major roadway is not pleasant, and parallel access adds extra width to the right-of-way. Virtually parallel access exists just 100 feet away from Doyle Drive, on Lincoln Blvd. or nearby trails. The Golden Gate Promenade, along the Crissy Field shore, is a flatter parallel route.

20. Encourage the use of tunnels and cut-and-cover to mitigate adverse impacts.

Vote: *Yes*- Unanimous.

At issue: Support for the tunnels proposed in the Michael Painter plan, and shown in some NPS concept drawings.

21. Follow the existing general highway corridor rather than cutting across the Presidio with new corridors.

Vote: *Yes*- Unanimous.

At issue: Some members of the public had suggested rerouting Doyle Drive across the Presidio's Main Post to exit at Broadway or at Lombard St., or via a tunnel under the Presidio to Geary Blvd. or downtown. The Task Force wanted to avoid such extreme changes of the parkway's corridor.

22. Align the roadway between Lyon St. and Doyle Drive to be along Gorgas Ave. instead of Richardson Ave.

Vote: *Yes*- 6; *No*- 2 (Rolfe-Environmental; McKean-NPS); *Abstain- 3* (Fontanello-at large; McVey-at large; Root-SPUR).

At issue: Yeas favored Gorgas Ave. because it is the historic industrial entrance to the Presidio; it provides restoration of open space which existed between the Presidio and the Palace of Fine Arts before construction of Doyle Drive, it offers a wider area for the right-of-way, permits linking of the Palace of Fine Arts lagoon to a restored Crissy Field wetlands, and moves the roadway and its traffic noise and vibration away from nearby residences. Noes felt that federal regulations require using Richardson Ave., that the Gorgas Ave. alignment "would effectively sever of the Letterman Complex from the park," and that the benefits of a Gorgas alignment were outweighed by "negative impacts" to the Presidio's cultural landscape.

23. Reconstruct Doyle Drive to contemporary seismic safety standards.

Vote: *Yes*- Unanimous.

At issue: Some regarded this as a non-issue, since Caltrans says any project will be built to current seismic standards.

Other recommendations

24. Provide more public transit service into and within the Presidio and the Exploratorium. Encourage its use, in keeping with the City's transit-first policy objective, including but not limited to the extension of MUNI service to the most traveled portions of the Presidio. For example, consider dedicated service from downtown to the Presidio.

Vote: *Yes*- Unanimous.

At issue: Marina representatives noted that they did not want new routes or corridors opened up through residential neighborhoods.

25. The Doyle Drive Task Force acknowledges the desirability of mass transit in the north bay corridor and encourages the public entities involved to pursue this matter as a high priority item.

Vote: *Yes*- 10; *No*- 2 (Root-SPUR; Rolfe-Environmental); *Abstain*- 0.

At issue: The strongest language the Task Force could agree on, without specifying a corridor which might never be used.

26. If there is a significant increase in traffic on Marina Blvd. as a result of the Doyle Drive project, appropriate agencies associated with the preparation of the Environmental Impact Statement should consider the effects of increased traffic on the seismic stability of Marina Blvd. in view of the unique liqueflable soils conditions that are found there. Lateral spreading; vertical settlement; and impacts on residential foundations, the sewer box and the roadbed itself should be considered. The EIS should consider effective mitigation measures such as shoring up the road, reducing traffic or redirecting traffic.

Vote: *Yes*- 12; *No- 1* (Edelman-CHP); *Abstain*- 0.

At issue: Noes felt this issue was automatically required by laws governing preparation of the EIS.

27. The Doyle Drive Task Force accepts "The Marina Neighborhood Recommended Protections and Traffic Management Controls in the Marina District Required As A Result Of The Redesign of Doyle Drive," as written by Joan Girardot, Gloria Fontanello, Norman Rolfe and Ron Somers, as an addendum to this report. The Task Force recommends that the issues be submitted to the relevant city departments for prompt evaluation and action.

Vote: *Yes*- 11; *No*- 2 (Rand-SF DPT; Suttmeier-SFPD); *Abstain*- 0.

28. Recommend to Caltrans at least five Task Force representatives of various interest groups to be members of Caltrans' Project Development Team. Include, in addition, a representative of Richardson Ave./Lombard St.

Vote: *Yes*- 12; *No*- 2 (Girardot-Marina; Fontanello-at large); *Abstain*- 1(Edelman-CHP).

At issue: Caltrans says that by law it must select interested parties as members of this advisory body on the project. Given the time pressure for prompt funding, the Task Force wanted people selected who were familiar with the issues. Adding a Richardson Ave./Lombard St. representative recognized an interest group which was impacted by the project, but had not been formally represented on the Task Force.

29. Designate a committee to advise the Supervisors and to monitor the Doyle Drive rebuild project to completion.

Vote: *Yes*- Unanimous.

At issue: Responds to feelings that the project needs to be continually watchdogged.

Design concepts and recommendations

During the course of ten months, the Task Force examined many design concepts and refinements, as presented in plan drawings by Michael Painter, Stanley Reinfeld, the National Park Service and Caltrans. We decided that in addition to making policy recommendations (which can be somewhat abstract), we would choose a preferred design concept. We did so intending to give the Supervisors and the public a picture of the kind of built scenic parkway our recommendations should lead to.

We recognized that each concept was made up of many elements, and that these could be separated geographically. So we examined each concept from west to east, beginning at the bridge toll plaza. We compared the concepts in each area, and chose the one we thought strongest. When we were finished, we recombined the elements to insure that we still had a sensible design.

That last step could have been difficult to resolve. What made it easy was that in every instance, save one where we wanted more information, we chose the concept proposed by Michael Painter. Thus, we voted to recommend it to the Supervisors.

Concept recommendations

1. Provide a pedestrian and bicycle pathway on the north side of the high viaduct, separated from the roadway.

Vote: *Yes*- 12; *No*- 1 (Edelman-CHP); *Abstain*- 2 (Spotswood-GGBD; McKean-NPS).

At issue: While the Task Force did not want such a pathway running the length of Doyle Drive, Mr. Painter demonstrated that unique and spectacular views would be available from a new high viaduct. Access would be by trails or local roads to the bluffs on either side of the small valley which the high viaduct spans. The viaduct pathway would allow pedestrians to walk 100 feet above the valley, instead of having to descend and climb out of it. In deference to law enforcement concerns, we specified that the pathway be separated from the roadway.

2. Align Doyle Drive from east of the bridge toll area to the Presidio interchange in a single arc, as shown by the Michael Painter concept.

Vote: *Painter*- 11; *Reinfeld*- 1 (Rand-SF DPW); *Abstain*- 3 (Root-SPUR; Wong-SF DPW; McKean-NPS).

At issue: The options were Mr. Painter's single arc, generally slightly south of the existing road; the NPS designs,

generally following the "broken back arc" of the existing structure; or Mr. Reinfeld's design, which moved the alignment north onto Crissy Field, as an elevated structure on pilings. A new alignment allows traffic to use Doyle Drive while the new parkway is constructed.

3. Cover Doyle Drive with a tunnel extension of the bluff near the Main Post.

Vote: *Yes*- 10; *No*- 0; *Abstain*- 5 (Wong-SF DPW; Pavlovsky-Marin; McKean-NPS; Root-SPUR; Edelman-CHP).

At issue: Painter and NPS plans showed this tunnel.

4. Cover Doyle Drive with a tunnel extension of the bluff near the national cemetery.

Vote: *Yes- 9*; *No*- 1 (Girardot-Marina); *Abstain*- 5 (Wong-SF DPW; Pavlovsky-Marin; McKean-NPS; Root-SPUR; Edelman-CHP).

At issue: Mrr. Painter's plan showed this tunnel, east of the one at the Main Post. There had been early concerns that it would impact the cemetery, but the Parsons Brinkerhoff engineering firm determined that the design fits without impact.

5. Conduct further design studies of a Presidio interchange opposite the Main Post.

Vote: *Yes*- Unanimous.

At issue: While the Task Force recommends direct access to the Presidio, we had seen more than a dozen designs and refinements of interchanges in this very complex area, and decided that we did not have enough information to resolve the issues involved.

6. Design the extension of Marina Blvd. in the Presidio in an arc to the north of Mason St., to the connection with the Presidio interchange.

Vote: *Arc*- 8;
Generally straight, on Mason St. alignment- 2 (McKean-NPS; Rand- SF DPT);
Abstain- 5 (McVey-at large; Wong-SF DPT; Pavlovsky-Marin; Root-SPUR; Edelman-CHP).

At issue: Painter brought the Marina Blvd. extension in a sweeping arc which promises wonderful bay views, provides access to a boardsailing launch area, allows for a hidden parking area near the Palace of Fine Arts, and would discourage cars from speeding from Marina Blvd. towards Doyle Drive. NPS said the arc could intrude on shoreline recreation. The Mason St. route essentially follows an existing road, connecting more directly to the Presidio interchange.

7. Align the eastern end of Doyle Drive north of Lyon St. along Gorgas Ave. instead of Richardson Ave. past the Palace of Fine Arts.

Vote: *Yes*- 10; *No*- 2 (Root-SPUR; McKean-NPS); *Abstain*- 3 (McVey-at large; Rolfe-Environmental; Pavlovsky-Marin).

At issue: Reaffirms policy recommendation 21, favoring the Gorgas Ave. alignment as a concept recommendation.

Summary of public testimony

Organizations

The Marina Civic Improvement and Property Owners Association and the Marina Neighborhood Association wrote to endorse reduced traffic on Marina Blvd. and Bay St.; limiting of rebuilt Doyle Drive on and off ramps to one lane in each direction; reduced traffic along the Marina Green and Ft. Mason Great Meadow as part of a redesigned Doyle Drive; increased enforcement of existing traffic management controls; maintaining and improving the recreational potential of the northern waterfront. The letters argued that Marina Blvd. is zoned residential, while Lombard St. is zoned commercial and, with Richardson Ave., is Hwy. 101. The letters expressed concerns over soil instability, liquefaction and lowered property values as a result of increased traffic.

Harold Hoogasian, of the Union St. District Council of Small Businesses testified in favor of increased traffic on Lombard St., as a benefit to the commercial shopping street and local merchants.

The American Institute of Architects/San Francisco wrote to support Michael Painter's conceptual plan.

Christina Orth, Chief of Staff of The Exploratorium, testified about the museum's proposal to expand into the Presidio. She expressed the need for public transportation, vehicle and pedestrian access to the Presidio, and was concerned with any alignment of Doyle Drive that would impact the Exploratorium.

Petitions

Letter from 98 Marina district residents, many near Richardson Ave. and Lombard St., advocating fewer trucks and buses on Richardson Ave.; stronger enforcement of speeding laws; and longer signals for pedestrians crossing Lombard St.

A petition containing 425 signatures of Marina district residents and recreational users of the Marina Green area, supported reduced traffic on Marina Blvd. from any future redesign of Doyle Drive.

A petition containing 72 signatures of residents on or near Marina Blvd. and Bay St. raised points similar to letters from the two Marina neighborhood organizations. They asked that an Environmental Impact Statement address an extensive list of potential impacts, including noise and air

pollution along Marina Blvd., the potential for liquefaction caused by increased traffic and vibration, and the loss of the health, safety and welfare of marina residents and park users along Marina Green should any redesign of Doyle Drive increase traffic on their streets.

Individuals

Many Task Force meetings were attended by six to twenty members of the public, almost all of them Marina district residents who felt directly affected by the redesign of Doyle Drive. Many addressed the Task Force during its public comment sessions; others wrote letters. Most echoed neighborhood concerns described above. Many noted Marina Blvd. as zoned residential, while Lombard and Richardson are Hwy. 101. Other common themes were that noisy, heavy trucks and buses made nearby houses vibrate; speeding cars crashed into houses; the need for stronger enforcement of traffic laws; lower speed limits; more traffic signs, signals, pedestrian crosswalks, or pedestrian bridges over Lombard St.

Others suggested that traffic should be rerouted, most commonly to Geary Blvd. via Route 1; but also through the Presidio to Broadway, via a reopened Broadway Gate; through a tunnel to downtown; through the Presidio; or via a new bridge from Tiburon to Angel Island to downtown San Francisco.

Summary of Appendices

Senate Bill 147, dated January 31, 1973. Prohibits Caltrans from widening Doyle Drive to more than six lanes without the specific approval of the Board of Supervisors of San Francisco.

Golden Gate Long Range Transportation Program. Prepared by Kaiser Engineers, April 1975. Provides alternatives for getting buses from the Golden Gate Bridge to downtown, including the implementation of a contra-flow lane used exclusively for buses on Lombard Street or the creation of an exclusive bus lane on Lombard Street.

Recommendations of the Citizens Advisory Panel of the Golden Gate Transit Planning Project Concerning Safety Improvements To Doyle Drive, dated April 24, 1975. Shows that widening of Doyle Drive to provide four lanes in the peak direction would result in an increase in traffic capacity. The report recommends 3 lanes in each direction, a positive median barrier, as well as the temporary closure of the Park Presidio entrance to Doyle Drive during the morning rush hour only until additional public transit could be provided to reduce overall traffic on Doyle Drive.

Section 4(f) of the Department of Transportation Act. Excerpted from the Federal Register, Volume 45, Dated October 30, 1980. Addresses the policy of use of National Park lands for projects such as highway reconstruction, and stipulates that no national park lands may be used unless there is no feasible and prudent alternative to the use of land from the property.

I-480 Route Concept Report. Caltrans. September 1986, page 12. Shows accident and fatality rates for Doyle Drive, and current and future operating conditions.

Route Concept Report for Route 480. Prepared by California Department of Transportation, dated September 1986. Advocates an eight lane facility with a positive barrier between opposing lanes of traffic on Doyle Drive. The report recommends a five lane connector along Richardson Avenue and a five lane connector to Marina Boulevard. These connectors would have three lanes in the south bound direction and two lanes in the northbound direction.

The San Francisco Master Plan; Transportation Element; Including policies on not increasing existing vehicular capacity of roads entering the city, and discouraging non-recreational and non-local travel near recreation areas.

Department of Transportation, Letter To the Board of Supervisors, dated May 23, 1988. Recommends rebuilding

Doyle Drive to an eight lane freeway separated in the center by a positive median barrier, and recommending an alternative proposal of a six lane freeway with a positive median barrier, which would be consistent with the Milton Marks Bill but would require closure of the ramps which allow travel between the Marina District and the Richmond District via Doyle Drive.

Department of Transportation letter to San Francisco Board of Supervisors, dated November 14, 1991. Recommends to the Board of Supervisors the "viable solution" of reconstructing Doyle Drive with six lanes (3 lanes in each direction), but with no connections between Route 1 and the Marina district ramps.

Connections Using Standard Entrance and Exit. Excerpted from the Highway Design Manual by Caltrans, dated February 18, 1992. Shows diverging branch connections for standard highway design and proposes an "incomplete plan" for the branch connection from Doyle Drive to Marina Boulevard.

Commuter Counts for the Month of June 1992. Prepared by the Golden Gate Bridge and Highway Transportation District.Shows commuter counts taken by the Bridge District on Monday June 1, 1992 and Friday June 5, 1992 during the 6:00 a.m. commute period.

Department of Transportation Memorandum, dated July 27, 1992. Describes the inclusion of Van Ness Avenue, Lombard Street and Richardson Avenue into the State Highway System in 1910 and 1945, respectively.

Typical Peak Counts on State Route 480, dated July 28, 1992. Prepared by Caltrans. Shows tube counts on Park Presidio Boulevard, Marina Boulevard and Richardson Avenue for the period July 24 through July 30, 1992.

Development Principles for Doyle Drive Reconstruction. National Park Service, Golden Gate National Recreation Area, November 1992. Includes 5 objectives which are generally consistent with the Task Force's final recommendations.

Gorgas Alignment Proposal, prepared by E. De Martini. 1992. Shows a route alignment along Gorgas Avenue with interconnection with Richardson Ave. in the vicinity of Halleck Street in the Presidio.

Preliminary Transportation Use Projections For the Presidio, Prepared by the Golden Gate National Recreation Area. Revised November 25, 1992. Shows estimated Presidio-related uses of Doyle Drive.

Doyle Drive Reconstruction Concepts. 1992. National Park Service. Prepared under contract by Robert Peccia & Associates. Shows five concepts and describes the strengths and weaknesses of each concept and provides a comparison between these concepts and an early Michael

Painter proposed design.

Doyle Drive Connection to Marina Blvd./Presidio. Prepared by Michael Painter Design, dated December 7, 1992. Shows signalized intersection for urban interchange off Doyle Drive.

Peak Pricing. Sierra Club Presidio Task Force, dated December 7, 1992. Recommends controlling peak demand for the morning southbound rush from the Golden Gate Bridge by altering commute habits by having the Golden Gate Bridge charge a premium during congested peak periods.

Noise Quality Analysis (Preliminary Draft). Prepared for the National Park Service by Robert Peccia and Associates. 1992. Provides guidelines for assessing noise impacts due to traffic, which must be complied with for projects involving Federal-aid funds. The study shows noise levels ranging from 70 to 80 decibels recorded along the two major roadways that pass through the Presidio, which exceed the activity category standards that will be affected in the National Park.

A Proposal For The Redesign of Doyle Drive. Prepared by Michael Painter. 1992. Shows proposed and existing plan and profile drawings, describes the impact on the historic Presidio, the plan's open space bonus and traffic flow and safety improvements.

Pedestrian Access - The High Viaduct As A Link To Golden Gate Bridge. Prepared by Michael Painter Design, dated December 12, 1992. Shows park amenities, views from the Doyle Drive Plan, Pedestrian Bicycle and Routes, Construction and Bypass Roads.

Collision History For Beat 10, 1982-1991. 1992. Provided by Joyce Pavlovsky. Shows 12 recorded deaths due to collisions on Doyle Drive in the 10 year period.

Presidio Traffic Analysis. Prepared by Robert Peccia and Associates for the National Park Service, dated 1992. Summarizes automobile use of Presidio roadways and connections at intersections just outside the Presidio in 1991.

Existing Signing On Doyle Drive. Prepared by Caltrans. For Information Only.

Patterns and Trends of Traffic On The Golden Gate Bridge, Park Presidio Boulevard, Doyle Drive, Lombard Street and Marina Boulevard. Explanatory text of the traffic trends prepared by staff of the Golden Gate Bridge and Highway Transportation District, Department of Planning and Policy Analysis.

Plan for the Reconstruction of Doyle Drive and Proposed Rapid Transit Rail Line. Prepared by Stanley Reinfeld, dated January 3, 1993. Identifies various sections of the roadway that would include a rail transit corridor with various stops in the Presidio.

Addenda

The Task Force voted to attach to this Report
the following statements, as written by their authors.

ALIGNMENT ISSUES

There were several ideas presented for new Doyle Drive alignments that were substantially outside the existing right-of-way, including use of Crissy Field and crossing the Main Post to either Lombard Street or Broadway Street. The Task Force found that the impacts on the Presidio would be too extensive. Several less dramatic realignments were discussed; the issues are summarized below.

Upper Viaduct

The upper viaduct now provides passage over a valley in the Cavalry Stables area south of the Golden Gate Bridge. There was discussion that it may be feasible for the new construction to be built south of the existing structure, so that the existing roadway could be utilized during the construction period and then removed. Michael Painter recommended a single continuous arc from just south of the toll plaza to the National Cemetery area as a safe alternative. Other design concepts utilized curves that were similar to the existing design to limit vehicle speed.

Lower Viaduct

Because the Painter concept calls for bringing the highway down to grade at the north end of the Main Post using cut-and-cover tunnels, the lower viaduct was not discussed as such. Instead, the Task Force discussed reducing the vertical profile of the roadway to the extent possible while still allowing Presidio access across the highway and achieving the split of Highway 101/Richardson bound and Marina Boulevard bound traffic. This led to the following issue regarding a Presidio interchange.

Interchange within the Presidio

There were numerous discussions about potential locations for a Presidio interchange, because this is one of the most complex design issues. Most ideas concentrated on having an interchange at the north end of the Main Post in the area between Halleck Street and the Mason Street warehouses, however this will potentially be a very busy area in the future. A few ideas were put forward to move some ramps west of the Cemetery area, but that is complicated due to proximity of the Highway 1/ Park-Presidio interchange. Combining Marina Boulevard traffic with Presidio traffic may be the most efficient way to achieve all the turning movements which would be required at entrance and exit ramps and associated intersections with Presidio roadways and Marina District and Palace of Fine Arts accesses. No concept illustrated to date seems to capture the most advantageous solution, and all agreed that more study was needed to understand and find the best solution. It was agreed, however, that an interchange within the Presidio would provide a clear park entrance, reducing visitor confusion and use of local streets to access the park.

Richardson Avenue vs. Gorgas Avenue

Richardson Avenue is the Highway 101 alignment from Lombard Street to Doyle Drive. It enters the Presidio to the west of the Palace of Fine Arts and to the east of the Letterman Complex. The ramps arc out towards the Palace of Fine Arts to connect with the Marina Boulevard traffic entering the highway. Right at the Presidio boundary beyond Lyon/Richardson intersection there is a narrow neck where the roadway probably cannot be widened. Just inside the boundary the roadway can be widened to six lanes with shoulders. The NPS suggests moving the Richardson Avenue alignment closer to the back of the Gorgas Avenue warehouses. The City street character and constraints are continued through the Lyon Street area neck and then the lanes flare out and shoulders can be provided.

Michael Painter's concept utilizes Gorgas Avenue to expand the Exploratorium/Palace of Fine Arts open space, and recommends extending the Palace of Fine Arts lagoon to Crissy Field. A small, tight curve from the Richardson alignment would be needed at the Francisco intersection to connect to Gorgas Avenue. The Gorgas alignment would move the parkway farther away from one block of residential buildings on Richardson Avenue.

Either alignment would have similar views northwest to the Golden Gate Bridge while the Gorgas Avenue alignment would momentarily have better views eastward to the Palace of Fine Arts. On the Gorgas Avenue alignment the warehouses and recreation buildings would obstruct views of the Palace of Fine Arts. Public transit stops and pedestrian and bicycle access across the highway would be possible on both alignments at a new signalized intersection. The NPS believes that utilizing the Gorgas alignment would essentially sever an important element of the Letterman complex, negatively affecting the National Historic Landmark. The NPS representatives contend that it is feasible to utilize land along the existing highway alignment; federal requirements would require utilization of the existing right-of-way, because the benefits of the Gorgas alignment presented to date would be insufficient to outweigh the negative impacts on historic resources. The NPS would not support a Gorgas proposal through the federal compliance process.

Marina Boulevard extension ramps vs. Mason Street

Most illustrative concepts utilized the Presidio roadway, Mason Street, for the Marina Boulevard access to Doyle Drive. Marina Boulevard now essentially continues into the Presidio and is called Mason Street just north of a row of warehouses. The current alignment of the Marina Boulevard access to Doyle Drive, however, is located just south of those warehouses to the north of the main Exploratorium entrance. Utilizing Mason Street increases space available to the Exploratorium/Palace for open space and parking.

The Painter proposal shows the Marina Boulevard extension sweeping north and arcing towards the windsurfer parking area on Crissy Field to meet its connections with Doyle Drive and Marina Boulevard. The NPS felt that it is important to try to minimize an arc or utilize the alignment of Mason Street to minimize encroachment on shoreline and the recreational open space opportunities of Crissy Field, and lessen audible and visible intrusions. Their transportation engineering consultant felt that this was possible in aligning a connection to Doyle Drive.

Note: The National Park Service prepared this addendum to provide more background information on several of the alignment issues which affected voting on some of the design concept recommendations. Some members of the Task Force felt that more design, engineering and environmental impact analysis was needed prior to resolution of these issues.

Submitted by:
Lauren McKean
National Park Service
Golden Gate National Recreation Area
Presidio Planning Team

January 26, 1993

THE MARINA NEIGHBORHOOD

RECOMMENDED PROTECTIONS AND TRAFFIC MANAGEMENT CONTROLS

IN THE MARINA DISTRICT

REQUIRED AS A RESULT OF THE REDESIGN OF DOYLE DRIVE

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PREPARED BY: Joan Girardot, Doyle Drive Task Force Member of the **Marina Civic Improvement and Property Owners Association**

Gloria Fontanello, Doyle Drive Task Force Member, San Francisco Resident of the **Marina Neighborhood Association**

Norman Rolfe, Doyle Drive Task Force Member, San Francisco Resident, representing **Environmental Organizations**

Ron Somers, Doyle Drive Task Force, Acting Secretary, **Marina Resident**

January 12, 1993

I. INTRODUCTION

Any redesign of Doyle Drive will significantly impact the adjacent Marina neighborhood. Traffic management protections for the neighborhood to be most affected by Doyle Drive are therefore necessary.

II. DISCUSSION

Background - By the year 2010, the National Park Service estimates that as many as 22 million people will visit the Presidio yearly. This number will be added to the constant commute pressure already sustained by the Marina neighborhood, with Doyle Drive now handling over 90,000 cars daily.

Concept - Doyle Drive should be designed in a manner consistent with a National Park setting and the adjoining residential Marina neighborhood, which has become an important recreation destination for tourists and locals. Recreational points of interest such as Fort Mason, the Marina Green, the St. Francis Yacht Club, the Palace of Fine Arts and the Exploratorium should be protected and as much as practical kept vehicle free to enhance the area's recreational potential.

Proposed Marina Neighborhood Traffic Management - Given that any redesign of Doyle Drive will significantly affect the Marina neighborhood, the following traffic management protections for the Marina neighborhood are recommended for adoption by the San Francisco Board of Supervisors:

III. NEIGHBORHOOD TRAFFIC MANAGEMENT PROTECTIONS

1. **Reduce Speed Limits** On Marina Boulevard and Bay Street To 25 MPH. Discourage the peripheral routing of commute traffic onto these residential streets.

2. **Increase Enforcement** of speeding violations, signal running and truck and tour bus violations on Doyle Drive-affected streets.

3. **Add Stop Signs or Alter Existing Lights To Prevent Speeding And Commute Routing**. Residents have requested adding a stop sign at Marina Boulevard at Divisadero. Also, residents have requested restoration of the STOP sign for Marina Boulevard at Fillmore as well as altering signal timing and channelization at Bay Street at Laguna. Elderly residents in the area (The Heritage) require four-way crosswalks and a safer and longer light crossing at Bay and Laguna.

4. **Increase Pedestrian Access** to public parklands and the National Shoreline. Crosswalk crossings should be added along Marina Green as well as additional signage or signal lighting to afford safe pedestrian and bicycle passage.

5. **Restore Pedestrian Islands** at Marina Boulevard at Cervantes and at other key recreational crossing points along Marina Boulevard and Bay Street.

6. **Extend Green Light Timing** To Enable Safe Pedestrian Crossings. Signalization along Marina Green and Bay Street do not allow adequate time for safe pedestrian crossing.

7. **Do Not Synchronize Signalization**. Commute traffic should be discouraged along Marina Boulevard and directed to the primary Lombard Street Corridor. The Marina Boulevard/Bay Street peripheral route surrounds the City's most treasured open space and shoreline, which must be protected. Signals should be unsynchronized and cross-traffic green time should be increased.

8. **Continue Prohibitions On Heavy Vehicle And Commercial Traffic**. Marina Boulevard and Bay Street border a significant recreational open space worthy of protection by maintaining existing bans against commercial traffic on residential streets. Millions of tourists each year come to San Francisco to enjoy the peace and splendor of San Francisco Bay. This recreational enjoyment should not be intruded upon by heavy commercial traffic. Commercial vehicles must continue to be restricted to existing commercial streets, and further erosion of the residential neighborhood must be discouraged. It is the special character of the Marina in its transition from neighborhood to park to pristine shoreline that makes the Marina neighborhood a popular destination enjoyed by tourists and locals alike. It is essential to keep heavy truck traffic and tour buses off residential streets.

9. **The National Park Service Must Be Required to Prepare a Traffic Management Plan** for the Presidio that discourages the use of Mason Street as an additional through feeder lane to Marina Boulevard.

10. **Lift Tow-Away Restrictions From Bay Street West of Van Ness** Afternoon peak traffic should be diverted southbound down Van Ness Avenue to Highway 101, Lombard Street. Bay Street and Marina Boulevard should not be encouraged as a peripheral commuter route.

11. **Investigate means to divert westbound Bay Street traffic to Van Ness Avenue and Lombard Street (Highway 101)** rather than direct traffic onto Bay Street and Marina Boulevard. This should include studying the potential for installing a signalized "left arrow" turn lane from Bay Street to Van Ness Avenue.

12. **Study Adding Peak Commute Hour Tow-Away Restrictions on Lombard Street and adding exclusive bus lanes to enhance mass transit commuting to and from Marin.**

13. **Residential Permit Parking Restrictions Should Be In Effect 7 Days A Week**; the National Park Service should be responsible for providing adequate parking for all GGNRA activities.

14. **Support Neighborhood Efforts To Install Decorative Stone Entrances** at the Marina entrance locations of Bay at Van Ness, Francisco at Van Ness, Chestnut at Van Ness and at Marina Boulevard at the Presidio to orient motorists to the residential character of the neighborhood and to encourage commercial and business traffic to avoid residential streets and remain on commercial routing. The gates would be similar to those distinguishing other City neighborhoods such as St. Francis Wood, Ingleside and Sea Cliff.

15. **Recommend to the Golden Gate Bridge and Highway Transportation District (District) that Single Occupancy Vehicle Traffic (SOV's) Be Discouraged** by considering differential tolls on SOV's and offering incentives to High Occupancy Vehicles (HOV's) and carpoolers and users of mass transit.

16. **Enable Marina Neighborhood Representation** on the Boards of the public entities directly affecting the neighborhood, including the Bridge District (District), the GGNRA, and the Fort Mason Foundation and any other Presidio-related entities that may be organized.

IV. CONCLUSION

There is no doubt that any redesign of Doyle Drive will have a direct impact on the future development of the Marina neighborhood, particularly as the Presidio converts to a National Park. Accordingly, these specific neighborhood protections and traffic management controls enjoy the support of the **Marina Civic Improvement and Property Owners Association**, the **Marina Neighborhood Association, environmental organizations**, as well as by residents and park users. Specifically, **79 resident property owners** living on Marina Boulevard and Bay Street have signed a Petition in support of these protections, and more than **500 Marina Green and Great Meadow park users and local residents** have petitioned for traffic reduction along Marina Green.

The Marina neighborhood serves as a public access zone to some of the nation's most special national parklands. The Marina Green and Fort Mason Great Meadow are cultural, historical and recreational treasures worthy of maximum environmental protections, and the effect on these of an expanded Doyle Drive as well as conversion of the Presidio to a National Park cannot be discounted. At the minimum, as part of any redesign of Doyle Drive, it is strongly recommended that these controls and measures be immediately adopted to **ensure the protection of the** residential character of the **Marina neighborhood and** preserve the recreational potential of **the City's waterfront and National Shoreline.**